ILKESTON SECONDARY SCHOOL. VIEW FROM SOUTH-EAST.
G. H. Widdows [*F.*], Architect.

School Design

By GEORGE H. WIDDOWS [*F.*].

WHEN the Council did me the honour to ask me to read a paper on schools I found it difficult to decide in what way the matter should be treated, as everything had already been said prior to the outbreak of the war on present-day methods ; and the war has, as far as school buildings are concerned, effectually hindered progress. I therefore made enquiries as to what was expected of me, and was told that I was expected to sum up the past, to deal with the present, and to foretell the future !

This somewhat encyclopædic presentation of the case brought its own light with it and caused one to think ; but to deal with the past, present and future in the way that they should be dealt with would stretch beyond the capacity of an evening meeting. I therefore do not purpose dealing in detail with the past history of education and educational buildings. The development of secondary education from the catechetical schools of the second century A.D., brought about by the conflict of Christianity with pagan philosophy, has already been ably dealt with, as also the rise and progress of elementary schools from about the same period.

At first in the Christian era elementary education was given in the home ; but after the decline of fervour in Christian families following the Peace of the Church in the reign of Constantine, schools for ordinary education became an acknowledged thing, and were commended by the Council of Vaison in the year 529. Thenceforward there was steady development through the Middle Ages by means of monastic, cathedral and chantry schools on the one side, and guild, hospital and city schools on the other—a system not altogether unlike the dual system of the present day.

Thus far the emphasis was laid on the spiritual training ; then came the Renaissance and the Reformation, with the re-foundation of many schools in the reign of Edward VI ; and in this period the emphasis was laid on the intellectual training. From that time onward to modern days the development is well known. In the last few years the emphasis appears to have been laid on the physical side ; and we, as architects, have been concerned more with this, in endeavouring to express in our buildings a solution of the problems of heating, lighting and ventilation.

The impetus given to school hygiene was undoubtedly brought about by the passing of the 1902 Act. Although this Act, which brought into being our large educational authorities, made no provision for the school medical officer, nevertheless it soon became apparent that this official would look into things and make his presence felt. That much required attention is undoubtedly a fact ; and the credit for drawing attention to the unsatisfactory planning of schools must be given to Doctor George Reid, of Staffordshire. He, with Mr. Hutchings, the Staffordshire authority's architect, was the first to break down the bad tradition of the central hall. I think we in Derbyshire may claim to run a close second, and before long nearly all other authorities took up the running.

In the old central-hall type of school one apartment ventilated into another, and the free circulation of pure air was impossible. We know that the central-hall type of plan was developed with the idea of giving the head teacher very little walking exercise. By seating him at a lordly desk, and by providing spy-holes called borrowed lights, the head teacher was converted into a kind of glorified policeman, instead of being, as he should be, a guide, philosopher and friend of children and teachers.

With the abolition of the central hall and the acceptance of the principle of through ventilation one of the greatest revolutions in planning in any kind of building took place, with the result that in 1914, when school building practically stopped, our English schools had obtained a distinctive character which was known the world over ; and this character was brought about by adopting common-sense methods in connection with ventilation, lighting and heating.

I now purpose taking these three factors in school planning, and I do not purpose dealing with any others this evening.

If these three factors are mastered, then we have a sound beginning ; but to lay down hard and fast laws as to the shape of a school, the arrangement of its rooms, and the kind of apartments, is to stifle initiative, to deaden thought and hinder progress. No two schools, in my mind, ought to be alike. There ought to be special considerations for each school in every district, with special materials suitable for that district, which, when rightly used, should speak of the ideals which ought to govern both the school and the particular neighbourhood in which the school is placed.

Ventilation.

In the matter of ventilation we owe a great deal to Professor Leonard Hill, whose researches and books are so well known. He has entirely exploded old theories. Ventilation is the first essential, and bad ventilation will try both body and brain more quickly than bad lighting or bad heating.

Professor Hill bids us see that the old theory that the primary need of ventilation was to supply oxygen to the lungs is not true, otherwise consumptives would not be sent to the tops of mountains, where the amount of oxygen is less than in the valleys ; and that the primary need is to produce skin activity by the carrying away of the heat and moisture of the body.

The second chief thing that we have to bear in mind is that the best form of ventilation is not obtained by bringing in air near the bottom of a room and taking it out through the middle of a ceiling, but is best obtained, and in the simplest manner, by causing air to pass across the room by the agency of wind pressure.

The old theory that there were poisons in expired air is found not to be true ; and it is also found that the human body can only absorb a given quantity of carbon-dioxide, and that any excess is not absorbed by the system but thrown off ; thus the physical aspect takes the place of the chemical in this matter of ventilation.

The diagrams about to be shown will enable the principles of ventilation to be followed.

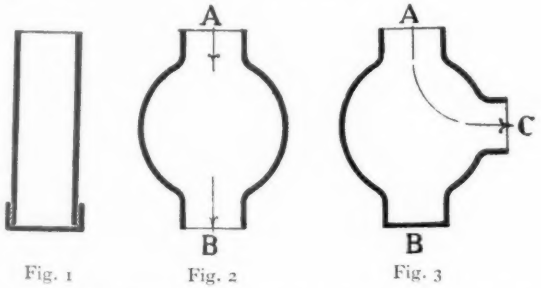


Fig. 1 Fig. 2 Fig. 3

The first three figures may be regarded as tubes holding liquids. In the first, while the end is capped the capacity of the tube is limited by its dimensions. If the end be removed, then the capacity of the tube is governed in a great measure by the constancy of supply.

In the second it is the same tube, but bulged in the middle ; and in the third the same tube with a

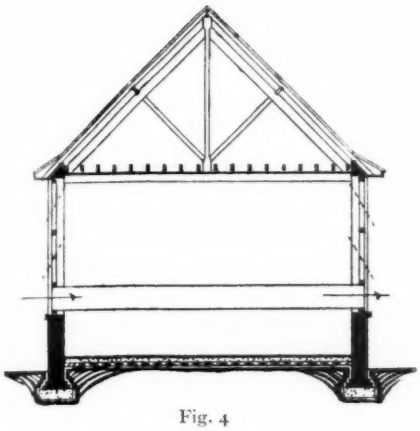


Fig. 4

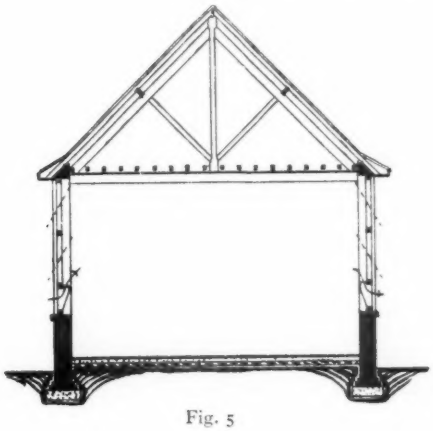


Fig. 5

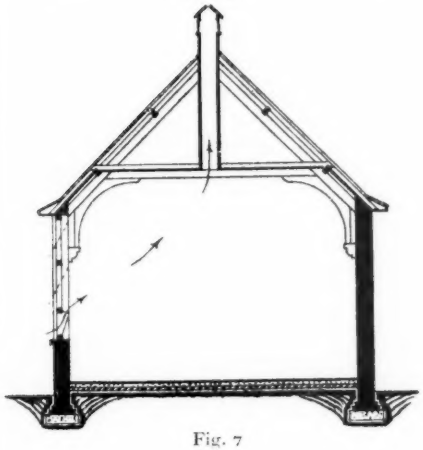


Fig. 7

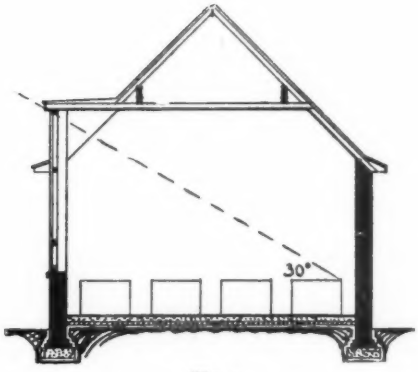


Fig. 9

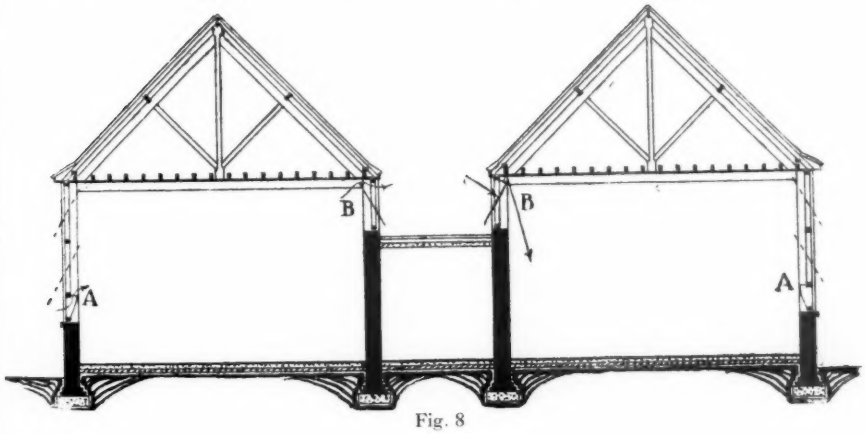


Fig. 8

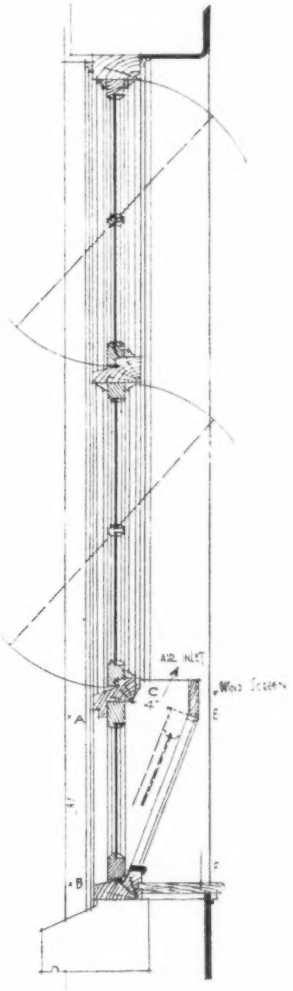


Fig. 6

side outlet instead of a bottom outlet. If these three diagrams be placed horizontally instead of vertically, then we get what we might expect to be the result in the three following diagrams (Figs. 4, 5 and 6) when dealing with air.

In the fourth diagram the hoppers are removed and a wooden tube crosses the room. The amount of air passing through that tube depends in a great measure upon the wind pressure, and corresponds to Fig. 1.

In Fig. 5 the tube is removed, and we have a similar effect to Fig. 2—that is, the air comes in at the hopper, the room is the expanded tube, and the hopper on the far side is the contraction through which the air departs. Given an area at the tops of hoppers of 10 square inches per child for inlet, and a similar area on the other side for outlet, and wind pressure of no more than four miles per hour normal to the face of the building, experiments show that the air in a room is changed ten times per hour by means of hoppers only. All this is accomplished without any mechanism or machinery and in the cheapest possible way, because the ventilator made use of is Nature's own—viz., the wind.

It may be asked as to what effect is produced when the wind is dead end-on, and not normal to the sides. It would appear from smoke experiments that the movement of the wind slightly to right or left sets up a vacuum outside the building, and that then the air is removed, not by propulsion, but by suction.

While dealing with the question of hoppers, I would draw attention to Fig. 6. So many people who design and make hoppers fail at the crucial moment. As the hopper falls inward the vertical height is decreased, and unless something in the nature of a wind screen is provided a horizontal draught passes over the top of the hopper. When we think that the work of a hopper is to cause air to be deflected upwards before entering a building, the failure to provide wind screens is rather remarkable, and yet one is constantly coming across cases where this little point, which is so essential, is overlooked. No hopper should open more than 4 inches in the clear, otherwise air is admitted in large quantities with much discomfort.

For the rest of the window, centre-hung sashes would appear to be the most convenient, the air being deflected across the room in a similar direction to that from the hopper. I have tried double-hung sashes in one case, and in one case only, and am of opinion that in every way centre-hung sashes are preferable.

In Fig. 7 will be seen the drawbacks of what was known as " ceiling extract ventilation." Provided things were normal and the wind pressure on the side in which the window was placed, then the air might be made to pass as indicated by the arrows, but it left the far side of the room almost untouched. If the wind were on the side of the school opposite to the window, then, of course, there would hardly be any air movement at all. Moreover, this form of ventilation took no account of the difference in temperature and the difference in weight between cold air and warm air, the result being that on a cold day air, instead of passing up the ceiling ventilator, came down it, with much discomfort to staid men with bald heads, and it was more common than not to find these ventilators covered over with brown paper.

In Fig. 8 we see an attempt to get through ventilation and yet have a central corridor. Central corridors are very depressing, and the so-called through ventilation is but little better than the ceiling extract system.

Before leaving the question of ventilation we must remember that bad ventilation is not only bad in that it does not remove the exudations of the body, but also because it allows bacteria to accumulate, and thereby become more dangerous in attack.

Yet another point to be remembered is that the stuffy smell in badly ventilated schools is due to the fact that children are not taught to use sanitary paper. The stench in these rooms is not, as some people imagine, from stale sweat. This should make us see the need for ventilation, especially when we remember that in areas where poverty is rife clothes are often made to serve for two or three persons.

As a last point in ventilation it used to be thought that windows must serve for both lighting and ventilation. At the outbreak of the war two experimental rooms were completed at North Wingfield, where the light was obtained by means of a skylight and the ventilation by means of doors on verandahs. I will draw your attention to this when the slides are placed on the screen in a few moments.

Lighting.

The second of the three hygienic principles is lighting, and there are certain facts which need particular attention ; and here may I say how much I owe to visits paid by members of the Illuminating

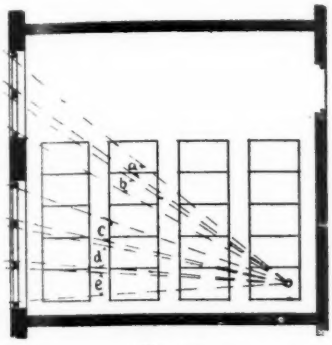


Fig. 10a

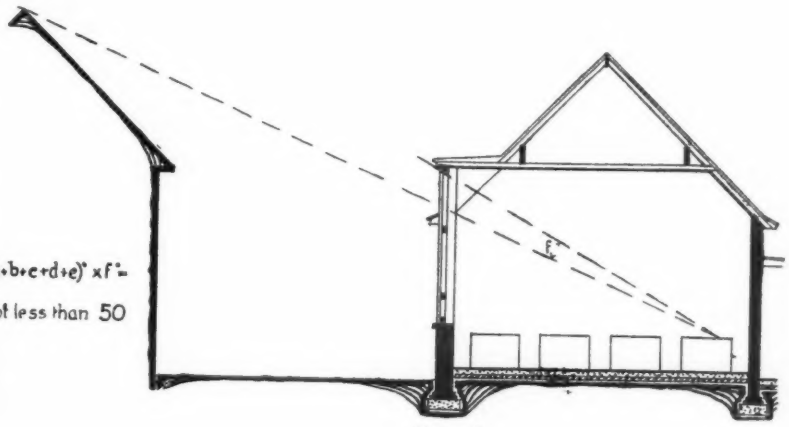


Fig. 10b

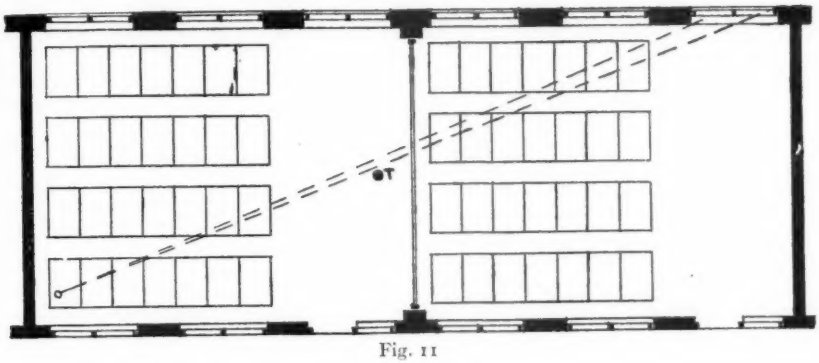


Fig. 11

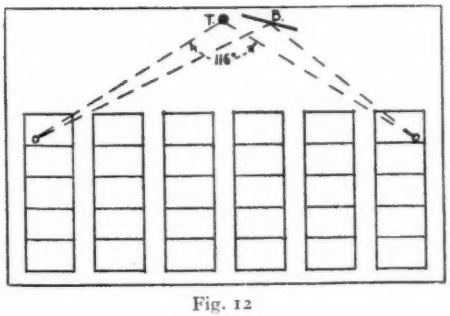


Fig. 12

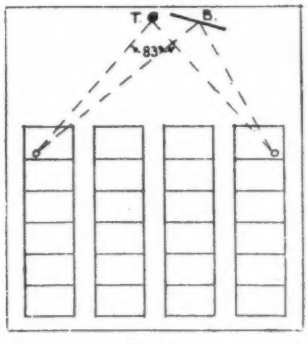


Fig. 13

Engineering Society and the help I have received from them? Especially do I wish to express my thanks to Doctor Kerr, of the London County Council.

Lighting can, of course, be by windows on one, two or three sides of a room; and while scientists agree that unilateral lighting is best, nevertheless it has not yet been shown that other forms of lighting are harmful. A light from the left from above the head is doubtless the most restful, and that is, I think, as far as we can go at present.

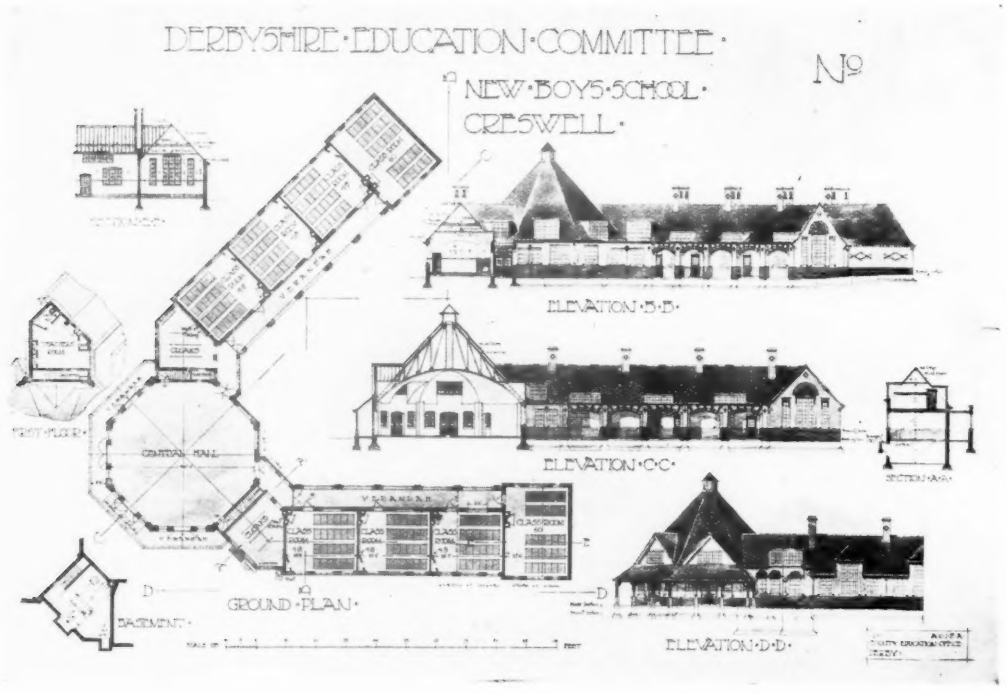
Where unilateral lighting is adopted one point to be observed is that a line forming an angle of 30 degrees with the top of the desk farthest from the window should, when projected, pass through the glass area of the window as shown on Fig. 9. Another point is that the glass area in rooms up to 20 or 21 feet in width should be one-fifth of the floor area. If this width is exceeded then the glass area would probably have to be increased to one-fourth or even one-third, but no room should be more than 25 feet wide.

A third point, which refers especially to town areas, is that 50 square degrees of clear sky should be observable on the desk farthest from the window This 50 square degrees is obtained by adding together the horizontal angles and multiplying by the vertical angle shown on Figs. 10A and 10B.

Another point in lighting is the undesirability of having movable partitions glazed. Teachers have a strong objection to glazing as it reduces the privacy of a class. Moreover it will be seen from Fig. 11 that a child sitting and looking at a teacher standing in front of a glazed partition may very well have its eyes strained with the light coming from the window of an adjoining room.

No class-rooms should, as a rule, be more than 21 feet in width. The perusal of the two diagrams (Figs. 12 and 13) will explain this. In a wide room the teacher has great difficulty in covering so large an angle of vision as 116 degrees. In an ordinary class-room of 20 feet the angle is reduced to 83 degrees; and what applies to the teacher applies more or less to the children looking at the blackboard.

In a room lighted from one side with a glass area equal to one-fifth of the floor area and without obstruction it is found that 2 per cent. of the sill



light reaches a point 20 feet away from the sill. This is more than double what is regarded as necessary for good lighting. In the case of North Wingfield, to which reference has already been made, and where the light is by means of an inclined continuous light running the full length of the class-room at an angle of 60 degrees with the horizontal, the lighting at a point 20 feet away is no less than 5·18 per cent. of the light falling upon the window-sill.

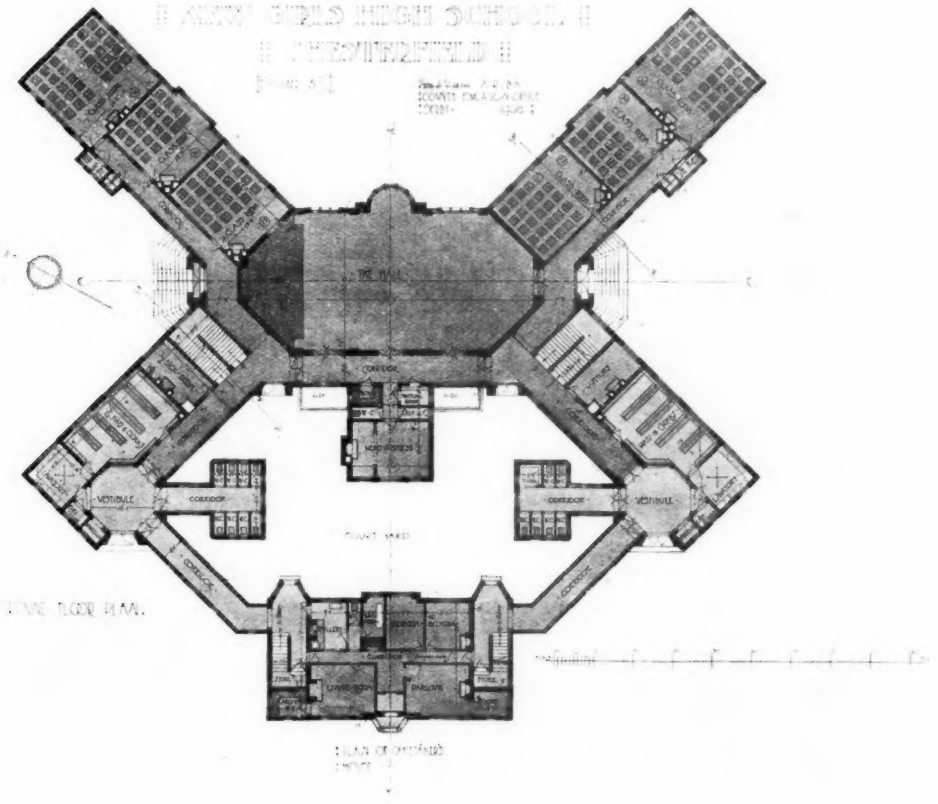
One other point in connection with lighting is connected with artificial lighting, and it is interesting to note that the minimum of daylight is the maximum of artificial light. The maximum amount of artificial light falling upon paper or light material is three foot-candles, except in the case of dress-making and manual work, when it should be four foot-candles. For class-room purposes it is found best to have the lights 8 feet 3 inches from the floor, and three candle-power for every 5 square feet of floor space will give approximately three foot-candles at the desk level.

Lights should be fixed so that they cannot be lowered and produce eye strain owing to the presence of too much artificial light. The source of light should always be screened and the best method is probably by means of prismatic glass.

Heating.

There are various ways of heating schools—grates and stoves are more or less cheerful, but the heating is partial, and soon dissipated when doors are open to admit scholars at the opening of a session. Another method is by means of warm air without propulsion, and this is very unreliable. When assisted by fans with the usual accompaniments the heating becomes deadly monotonous, while the windows, being closed winter and summer, have a very deadening effect.

A steady, deadly uniform heat is a thing to be



avoided. Moreover, in some heating systems the airducts become foul, and a considerable amount of dust finds its way into the building—in fact, one French scientist discovered that such air contained double the amount of matter that the ordinary air contained.

Other methods of heating are high-pressure steam and high-pressure hot water, low-pressure steam and low-pressure hot water ; and experience seems to show that of these four the last one is the most serviceable in a school. One of the things that became noticeable with the introduction of better ventilation was the inadequacy of the heating apparatus, usually low-pressure hot water, to be found in our schools. These were usually put in with a guarantee by the engineer that a temperature of 60 degrees would be maintained when the outside air was freezing, but to obtain this every door and window had to be kept shut.

On the assumption that the air should be changed not less than ten times per hour, it will be found that an area of about 35 square feet of heating surface to every 1,000 feet of cubic contents will be required, as the following figures show :—

In a room for 50 children there will, by the Board's regulations, be 7,000 cubic feet of contents, or 70,000 cubic feet of air per hour to be warmed. A British thermal unit will raise 50 cubic feet of air 1 degree in one hour ; therefore the B.T.U. required in this room will be $70{,}000 \times 28 \div 50 = 39{,}200$ B.T.U. per hour, assuming the outside temperature to be 30 degrees and the required temperature inside 58 degrees, a difference of 28 degrees. A square foot of heating surface will give off 1·75 B.T.U. per hour for each degree (F.) of difference between temperature of pipe and air. If the pipe temperature be 150 degrees there will be a difference of 150 degrees − 58 degrees = 92 degrees. The area of piping will, therefore, be $39{,}200 \div 92 \times 1{\cdot}75 = 244$ square feet. This is equivalent to 35 square feet of heating surface per 1,000 cubic feet of contents. If the rooms have a constant height of 14 feet, and the floor area be 10 square feet for each scholar, this may be regarded as requiring 5 square feet per child—or, in other words, the heating surface required will be one-half of the floor area.

A point to be remembered in connection with heating is that the boiler should always be 50 per cent. above its catalogue efficiency, and that the heating chamber should be capacious so as to enable a large store of fuel to be laid in.

At North Wingfield the heating is by means of steam pipes under a concrete floor composed of slabs 2½ inches thick. Owing to the heating pipes being out of sight the rooms have a much neater appearance and this method of heating is doubtless the best. By keeping the feet warm the blood circulates, and the admission of cool air striking the skin and filling the lungs acts as a tonic.

No great heat is required on the floor surface. A temperature of 75 degrees is more than ample ; and this, of course, is much less than the heat which reaches one's feet when sitting in front of a fire.

With these steam heating pipes 1 square foot at 212 degrees will heat a floor area of 2·82 square feet at 75 degrees. The heat above 212 degrees due to steam pressure is set off against the heat lost downwards. While steam has much to recommend it, I am not at all sure that hot water would not be better, as there is less mechanism to get out of order. On the other hand, during holidays, steam pipes not being full of water, there is no fear of fracture by frost.

For those who would wish to carry the matter further I would refer them to the article on school buildings in the *Encyclopædia of Education*, recently published by Messrs. Pitman.

Discussion

The PRESIDENT : We have listened to a most interesting Paper, and we would all like to express our admiration at once ; but I will ask Sir Edmund Phipps to be good enough to move a vote of thanks.

Sir EDMUND PHIPPS : May I, Sir, begin by saying how very much we of the Board of Education appreciate the kindness and courtesy of your Council in asking us to come here to-night ? It has been so interesting to come and see what we have seen, and to listen to what we have heard, that I have forgotten what it was that I had intended to say ! The truth is that Civil Servants are not often allowed to make speeches. Yet I will not pretend I was sorry when I was asked to propose this vote, because, just now, Civil Servants have something to say when they get a chance. As a rule, a Civil Servant cannot say anything in a speech except to apologise for his own existence, and at present he has to remember how much trouble he has given to everybody in the past, and how much expense he is causing them in the present. And yet, you know, gentlemen, times may change. In the past the Board of Education have, in one way and another, done something to encourage school building and make work for architects, and that time may come again. After all, schools are not a fashion ; school building is not a thing which is taken up at one time and dropped at another. These schools

are necessities, and every month that school building is put off, as it has been during the war, the need for schools is rising ; and sooner or later we shall have to have all the schools the building of which has been put off since the beginning of the war. So that before very long the time will come when you and we, instead of being in our present relations, will be allies again. I know that at present there is a certain amount of assurance wanted in any member of the Board of Education meeting any body of architects. I do not disguise the fact that I and my colleagues spend much time in preventing you from doing your work in building schools ; we are even stepping in and going back upon approvals which we have given in the past, stopping buildings which were on the verge of being begun. And that is extremely distasteful, and I want you to believe that we are really ashamed of ourselves ! But we have to do what we are told and what we are paid for, and we are trying to do it while preventing ourselves from losing hope for the future. But when the time comes again we shall be allies in a more real and important way than in the past, because since the last school building went on our whole arrangements with Local Education Authorities, County and Town Councils, have changed. In the old days if we tried to economise in school buildings it was only to prevent extravagance, to prevent the Education Rate being so treated that it had not enough left in it for other purposes. Now, when we are paying our proportion of all Local Authority expenditure, every farthing matters to the Chancellor of the Exchequer ; and with the admonitions as to economy which are being put before the world, we are all in the same boat, and we have to see that the rates and taxes are used just as far as is necessary and no further. There may be less supply of money for schools for the rest of our official—perhaps for our natural—lives, and all the money we can save on buildings is not going to be saved, but will be needed for books, equipment or teachers' salaries. We hope that architects, local authorities and the Board of Education will be working together, putting our brains into a common receptacle, as it were, to try to make the money go to the best advantage. I expect we shall not be found fighting each other in the future : we shall be working together to do all we can to make the best of a very limited supply.

The Board of Education did, in their last Building Regulations, just before the war, say they invited experiment. They said their Regulations were built up not on theory, but on the practice of living men. We have taken the best we could, and we have done all we could to learn from it. We say there we welcome new ways of doing things, and we will gladly listen to all you have to tell us. The pleasure with which we have listened to Mr. Widdows to-night is an example of that.

I have spoken too long already, Mr. President, but I know I can say, on behalf of this meeting, how extremely interested we have been in all Mr. Widdows has said, and how grateful we are—and if I may say from the Board of Education officially—how much interested and gratified we are at having been given a chance of hearing and seeing to-night ; we shall try to remember it. It is not for me to enter into the technicalities, of which I know little, but on which, I am told, Mr. Felix Clay will have an opportunity of saying a word.

But I would like to say something about Mr. Widdows personally. He is a very familiar figure in the corridors of the Board and by our fireside ; we have met on many occasions ; and if there is one thing he has left upon our minds—at all events, upon mine—it is this : that he has been able to—I was going to say get the better of us, but I don't quite mean that—he has been able to get the best out of us, to make the best of us. He is a man of such sympathy that in dealing with the Board he realises that we are not merely hide-bound officials by nature, but that we stand between the Treasury on one side and the Ministry of Health on the other, and there are many allowances which should be, and can be, made for us. He knows how we regard our present job. Mr. Widdows has endeared himself, personally and officially, to the Board and their staff, and it is with peculiar pleasure, Sir, that I stand here to-night to move a vote of thanks to Mr. Widdows, and also to thank you, Sir, and the Council for their kindness and hospitality in giving me the opportunity.

Mr. FELIX CLAY : Mr. President, ladies and gentlemen, I have great pleasure in seconding the vote of thanks to Mr. Widdows for the extraordinarily interesting paper we have heard. And I am particularly glad to do so in order to have the opportunity of testifying to the extraordinary amount of work which Mr. Widdows has done towards the development of the modern school plan. I have seen the plans at least of all Mr. Widdows' schools, and many of his buildings, and, incidentally, a good many others besides. No architect has done more than he has to develop the modern school. When we get at the Board plans by Mr. Widdows, they invariably give us something to think about, something to talk about, and, almost invariably, something to argue about. Yet, somehow, the building is generally put up very much in the form originally designed.

School planning had, as Mr. Widdows has said, an extraordinary development in the ten years just before the war ; up till that time it had been comparatively stable. I do not know whether you realise it, but it is half a century—this year—since the first central-hall school was built. The London School Board, in 1870, promoted a competition to try to get a satisfactory plan for an elementary school. It was won by Roger Smith ; and in 1872 the " Ben Jonson " school was erected. It was simply a central-hall school, with class-

rooms on three sides opening out of the hall, and it was thought at the time to be very unsatisfactory. The reasons were that they did not like having a number of class-rooms ; it was expensive in staffing, and they did not like having too many children in one building. They also thought the hall was a waste of space. Therefore they went back to the old pupil teacher system of plan ; that is to say, a long narrow room, where there can be a number of classes under the supervision of one head teacher. The pressure for separate class-rooms grew, and in ten years they came back to the separate class-room plan and hall, because they wanted some place to collect the children in.

In 1882 the School Board passed a resolution that no school should be built in future without a central hall, and ten years afterwards the " Ben Jonson "type was again adopted and became the standard type ; it was regarded as practically the last word in school planning. Changes were made in small matters of detail, such as the stair-cases, cloakrooms and so on ; but the main lines were continued until 1904, and we all thought it was the best thing to be done to secure supervision and compact-ness. Then it was that Dr. Reid, Medical Officer of Health for Staffs after the 1902 Act, was asked to look at the plans of schools, and he took strong exception to the central-hall plan, chiefly on the score of ventilation. And he worked out a plan, with Mr. Hutchings, and sent it to us at the Board. It consisted of a row of class-rooms, with windows on both sides, and a separate hall in the playground. We were very much astonished to get such a plan. Dr. Reid came to the Board, and we argued about it a long time. We thought cross-lighting would be unsatisfactory. But a school was built as planned, very much as an experiment, and a year after-wards I went to look at it. I chose the winter time so that I might see how the ventilation was working. It was a cold day in February, and there was some snow. It was remarkable that when I walked into a class-room from the fresh air outside—which is a very good test of ventilation—there was no smell, that school smell which is known to all who are in schools much. Yet there was no draught to speak of, and the headmaster was absolutely enthusiastic about the school. He said that in his old school, at Darlaston, he was about to give up his work ; he finished every day very tired and with a splitting headache, but now he felt at the end of the day as fresh as at the beginning. I noticed the absence of that chorus of coughs and sneezing and snuffling which seems to greet one on entering a class-room ; every other child seems to have a cold in the head. I said to the headmaster: " Where are the colds ? " He said: " We don't have them here; the only complaint I have had about the school is that some of the parents say their children eat too much now." The success of this school was remarkable, and local Educational Authorities heard of it ; in the neighbour-ing county of Derby Mr. Widdows learned of it, and they were not long in developing it rapidly. It was only really a short time in which the old central-hall plan became almost obsolete, and all the schools took the form of these single-storeyed spread-out buildings.

Mr. Widdows, in the three points he drew attention to, put ventilation first ; and in that I am sure he was right. Ventilation is an absolutely fundamental point on a plan. If you decide to make your school a cross-ventilation school, a class-room with windows on each side, you must have a certain sort of plan, and you must have definitely settled what system you will have before you can even start planning. I would like to say a word upon that matter of ventilation, because Mr. Widdows necessarily had to deal with it somewhat shortly in his Paper, and there may be some here who have not fully read Dr. Leonard Hill's investigations, and so may not feel altogether satisfied about the statement that efficient ventilation consists simply in the quality of the air.

Dr. Leonard Hill started out to investigate what has been called " crowd poison "—that is to say, the ex-tremely unpleasant effects produced by sitting for some time in a very crowded room. He took samples of air from such a room and carefully analysed it. He found that there was rather more oxygen in that air than even on the top of a moderately high mountain. He said, therefore, it is clear that the trouble is not due to lack of oxygen ; moreover, any lack of oxygen is compensated for by a slightly, almost imperceptibly, increased rate of breathing. Then he measured the quantity of carbon dioxide in this air, which is usually considered to be an index of the impurity. He found that in this un-pleasant room there were 10 to 12 parts of CO_2 per 10,000, which is high. Then he went into a factory where they make aerated waters, and there he found 30 to 40 parts per 10,000, yet the workers felt no inconvenience. So it seemed that at any rate chemically produced carbon dioxide was harmless, and therefore the trouble was not due to the CO_2. He then came to the conclusion that the real cause was stagnation of the air, which pre-vented evaporation going on from the skin and carrying off certain poisons from the blood. In order to prove this, he devised and carried out two experiments. He had a small glass-covered experimental chamber made, and he got three or four devoted students to sit in this ; he shut them up in it. In the top of the chamber he had had installed an electric fan, without allowing any inlet of air. When he saw that these students were on the point of collapse, the electric fan was started, and they revived at once. They seemed to have very little ill-effects. Therefore it was seen that the mere movement of the air had a great effect.

The second experiment was unpleasant—for him. He again put three or four devoted men into the chamber and shut them up ; he then attached an india-rubber tube into the chamber and put on a face-mask and sat

outside and breathed the air from the chamber. He left the men in there such a time that they again became bad and were on the point of collapse, but he felt no inconvenience, though he was breathing the same air as they were, because he was outside, in the midst of fresh moving air. These experiments are fully recorded in a Blue Book. It shows that the chemical composition of the air has nothing to do with the ill-effects accompanying sitting in a crowded room. And it is very interesting to us, because it gave us a scientific explanation of what we had found so successful in practice, plenty of fresh air coming in at the windows, as the most effective ventilation which could be provided. The experiments show why the schools in which the air is kept in motion are so successful.

The open-air school, again, has had great influence on the planning of the ordinary elementary school, because these schools, which proved so good for very delicate children, those with a tendency to become consumptive, were argued to be good, for the same reason, for other children too, many of whom are none too strong. So that we have now come to the conclusion, more or less, that the best form of ventilation is the old-fashioned window. The ventilating engineer, I know, will produce a wonderful result by various forms of ventilation—the Plenum system, for example; he will wash and dry and heat and manage to keep at an equable temperature the class-room, and yet the results are appalling to those who have to work in the room. We have Plenum heated rooms, and I have found teachers in them almost in revolt; yet, on paper, almost everything is perfect. The engineer, in fact, has produced the very conditions we want to avoid; what is wanted is a definite movement of air. The net result is that the whole emphasis in school design has shifted. Instead of the old compact three-storeyed central-hall building, we have a bewildering variety of plans; plans which come to us show all sorts of shapes, from cart-wheels to hospital-shaped buildings and L-shaped buildings, but all arranged so as to secure the maximum amount of sun and to get air into the class-rooms from both sides. And the result in the schools is so satisfactory that I doubt whether we shall ever get back to the other type of buildings. We have been very fortunate in having Mr. Widdows here to-night, whose great variety of work you can see from his drawings which are round these walls, as well as by the photographs he has shown on the screen; I have very great pleasure in seconding the vote of thanks to Mr. Widdows for his Paper.

Mr. H. W. WILLS: I feel I have some reason to speak on this matter, because I had the pleasure, six or seven years ago, of undergoing some of the hardest work I have ever undergone in my life. I met Mr. Widdows and went over with him fifteen of his schools, most of the schools you have seen depicted on the screen to-night. And, interesting and satisfactory though I thought them before I saw them in actual being, I was very much surprised and pleased to find how perfectly they were suited to their purpose on closer examination. I went into the schools at the close of the official day, and I should not have discovered, from any smell, that anyone had been occupying them. The variety of the planning struck me at once, after I had grown accustomed to the ordinary type of central-hall school, as a very great improvement, both as regards a better appearance and in the way of convenience. We have sometimes in these rooms discussed the question of official architecture; we have thought that the official architect took the work of the ordinary practitioner away from him; but after I had been round these schools designed by Mr. Widdows I came to the conclusion that there was very little in it, because in my progress through Derbyshire I did not see a school that might not have been the result of an extremely successfully conducted competition. And I concluded that the only thing the Derbyshire County Council had done was to shorten the process of selection. I therefore have very great pleasure in supporting this vote of thanks.

Mr. A. E. MUNBY: I have been exceedingly interested in Mr. Widdows' Paper. I have in my office plans of various buildings of his which I studied some years ago, and I would like to question him on one point in reference to heating. I had a school which it was proposed to go on with before the war, but it has, like so many others, since died. At that time I got a firm of heating engineers to try to work out a plan whereby the heating could be conducted on a system adopted by the Romans in years gone by—namely, by passing hot air through the floor. Mr. Widdows' method of heating his schools prompts me to ask the question—whether he has considered that method. He has some objections to the use of steam, and now uses hot water in these hollow floors. Would it not be possible to take hot air through the floors, perhaps in concrete channels, or through a hollow terra-cotta floor? I take it that with a long range of class-rooms there would have to be an upcast shaft, which would involve long chimneys, and that might not be desirable. But electricity is so general in these days that it would be a small matter to provide fans at the end of the building, which would actuate the draught sufficiently to draw the hot air through the floors (not through the room) as a continuous stream. I think the type of schools to which we are coming—the long range of class-rooms, one after the other—lends itself very much to that form of heating, and it would be interesting if Mr. Widdows, and perhaps Mr. Clay, would express opinions on that point.

Another matter is the use of tables and chairs by the children in place of the desks. Are we to consider that the old school desk is to become a thing of the past? Must a boy write at an angle of 15°, or not? And I

should like to hear about the right-hand and the left-hand light, which is considered to be of great importance. It would be very helpful if we could have some information upon that, more particularly as the design of school desks has been worked out with very great care.

Mr. W. J. H. LEVERTON: I ask, in regard to the school heated from the floor, whether dust is disturbed by it and rises in the air, and therefore whether special care has to be taken to keep the floors exceptionally clean. In certain railway carriages there are hot pipes, and in some the air is quite pestilential

Mr. J. OSBORNE SMITH: I think all who have had much to do with schools must feel they are very much in Mr. Widdows' debt for having driven forward in a most vigorous way matters which some of us have seen only through a mist. He has been acting as a prophet, for he has been looking ahead, and I am sure that this, and the thought he has given to the subject, will redound in the future in a very great blessing, not only to the children, but also to the teachers. I have been into schools from which children have had to be taken away because they were ill. I have heard this remark: "I dare not put a child more than a quarter of an hour against that grating." I hope that school no longer exists: I do not think it does.

With regard to this perflation of air—air blowing from one side of a room to the other—it was my privilege to emphasise that point at the last Congress in London, and I am very pleased to find the same theme taken up in a vigorous way to-night.

I have thought for many years that it was wrong to continue with heavy desks; they spoil the floors and cramp the children, and we were always trying to make them fit the shoulders and back, but without success; the boys grew, but the desks refused to grow. Tables of a removable type and ordinary chairs ensure that the child shall not be kept too long cramped up.

It struck me that the top light Mr. Widdows showed was rather large for the purpose; I get sufficient light without making them so deep. I think we have been honoured by hearing this Paper, and I join in supporting the vote of thanks.

Mr. G. GILBERT SCOTT: When speaking of heating, Mr. Widdows mentioned Liverpool Cathedral, and a subsequent speaker suggested that floor heating might be adopted by circulating hot air. At Liverpool I am adopting that system of heating the floor by channels through which the hot air circulates. It has the great advantage of enabling us to use marble or stone flooring, without, I hope, causing people to complain of a feeling of coldness to their feet. It is a reversion to the old Roman idea of heating.

Mr. W. A. PITE: Mr. Widdows has given us all a great deal to think about, and if he had been talking to us about the architectural treatment of hospitals he would, I think, have been able to speak of the same problems. I have always heard that the rules applicable to hospitals should govern schools too, and what we have heard to-night could also be most usefully applied to all buildings designed for the treatment of the sick.

The PRESIDENT: Before putting the vote of thanks, I ask to be allowed a few words.

I feel, like Mr. Pite, that we have one grievance against the lecturer, in that he described his discourse as one upon school architecture, whereas he has said so many things which are applicable not only to hospital and school work, but also to many branches of architecture. The great ventilation problem is one which has puzzled us all our lives in regard to buildings of large size; and had his title been different, Mr. Widdows' audience might have been drawn from other ranks of architects than those who have to-night been specially attracted. But his lecture was admirable, and afforded us ample food for thought, and added much to the information we all long for on such subjects.

I suspect that, among other things, Mr. Widdows is an expert in acoustics; he said a few words on that subject, which led me to think he was holding back a real reservoir of knowledge. Acting on that, I intend to go for him in privacy. I once erected a building in London which contained a committee room, and I intended it should be the best thing of its kind on the inhabited globe. I read all the available encyclopædias and the best books on acoustics, and into that building, intended to hold 50 or 60 persons, I crowded every known device to ensure success. The room was a desperate failure. It was cured, after trying three different remedies, by purchasing an £80 carpet.

There are very few questions I want to ask Mr. Widdows to reply to; indeed, there is only one, which may seem foolish to you. When we build windows with hoppers and windows on centres, we devise them so that they should facilitate the inlet of air, and I want to know from Mr. Widdows whether he tries any dodges to facilitate the exit of air on the leeward side of the room. Probably the answer to that is that so long as you have a push on one side, the pull on the other will take care of itself. Does he suggest that we should do anything in manœuvring the sashes to assist the direction of the outgoing air?

I cannot put this vote of thanks without also alluding to the mover and seconder of the vote of thanks, Sir Edmund Phipps and Mr. Clay. Mr. Felix Clay is a very well-known expert in these matters. I listened with thrills of horror to the story of the gentlemen who were put inside the glass case and demonstrated with the help of their outside companion that it was not the exhausted air alone which caused their collapse. It is news to me that the turning on of electric fans which churn the air without extracting it, really does good and not only seems to do so.

Sir Edmund Phipps gave us a charming insight into the possibilities and the actualities of the relations between the Civil Services and the professions. I know he is one of those who wish us to live in that mutual helpfulness to one another which leads to progress ; and what he said to-night in such kindly terms opens to us who are engaged from time to time with Departments of the Government the happy prospect of a smooth course in the future. I have much pleasure in putting the vote of thanks, which I am sure you will accord with acclamation.

Carried by acclamation.

Mr. WIDDOWS (in reply) : Mr. President, Sir Edmund Phipps, Mr. Felix Clay, ladies and gentlemen, I thank you very much indeed, especially you, Mr. President, for your very kind words, and for the way in which these thanks have been accorded to me. It is a real pleasure to we poor people who are stuck in the provinces, and who read the names of you distinguished people in London in the JOURNAL and in the professional papers, to come and to find that you are really flesh and blood, like the rest of us in the provinces.

You have seen, in the persons of Sir Edmund and of Mr. Clay, the kind of persons there are at the Board of Education. Take my advice, and never write letters to them, but go to see them ; you can write your letters after you get back, to supplement what has been said. And I thank Mr. Clay for having supplemented the brief idea I gave you of Professor Leonard Hill's work. There is plenty of food for thought in his report.

With regard to Mr. Munby's question about the use of hot air, I hoped someone would speak about it, but I did not think it would be an eminent man like Mr. Gilbert Scott. I have often admired his Cathedral at Liverpool, and I am most interested to know he is having hot air installed there. I should esteem highly the privilege if he will allow me to go to see the work there, because floor ventilation has come to stay.

With regard to having tables and chairs, instead of desks, everything is in their favour. It is all very well to put children to do their work at an angle of 15° at school, but under what conditions do they do their work at home ? Also, tables are infinitely better for woodwork, cooking, needlework, and so on. There is everything to be said in favour of tables and chairs, and I think we can now turn our attention to providing better store-room in schools. There is no real difficulty about dust rising with the warm air from the floor ; the floors are swept every day, and even if there is a little dust, it is only between 9 and 4 o'clock.

I admit the skylight is large, but the amount of light is not too great, and light from the north is stable and of soft quality.

With regard to the President's remark about my being an expert in acoustics, I beg to say I am not. And with regard to the " push and pull " in ventilation, there is nothing of the kind. If the hoppers are open on both sides and the wind is blowing on one, the only thing which can happen is for the air to go out on the other ; there is no need for any device for " pulling" the air out. You may ask what happens when the wind is " end on." Smoke rockets have shown that a vacuum, or something approaching it, is caused, and then the air is sucked out. I do not think heating may be essential in all places ; in the institution at Ventnor of which I spoke there is none. The building is placed on the side of a cliff, and, being for consumptive children, they give the children plenty of exercise.

While we are " strung up " with regard to new buildings, there is no reason why we should not turn our attention to the old ones. I saw a voluntary school the other day which had a room that was most depressing, and something was wanted to make it better ; they only put in one door, glazed to the bottom, and that made it much more cheerful. At small cost I am sure we can much improve many old buildings. We now always use the overhead system of pipes for heating, and have the radiators near the floor. The water is carried at once from the boiler to the highest point, and then gravity will be bound to carry it back to the boiler ; there is a good circulation, and you get value for your money.

With regard to the semi-permanent building I showed you on the screen, I said a wooden building worked out at about 11d. to 1s. a foot. A concrete building works out at the same price, and one has more happiness in putting up a concrete building than a timber one.

No. 282. LORD AND TAYLOR STORE, 5TH AVENUE, N.Y.
Starrett and Van Vleck, New York.

SCOTTISH RITE TEMPLE, WASHINGTON, D.C.
John Russell Pope, New York.

MUNICIPAL OFFICE BUILDING, N.Y. Old City Hall in Foreground.
McKim, Mead and White, New York City.

No. 156.—General View, Panama-California Exposition, San Diego, California.
Bertram Grosvenor Goodhue. New York.

Exhibition of American Architecture

By H. AUSTEN HALL [*F.*].

IF Paris gives the finest architectural training in the world, it is America that provides the opportunities for practice, without which we should never know the value of that training. For architecture as learned in Paris and practised in the United States is a very wonderful thing. It is the most alive of all the arts, and considerably the most important, for there is no expression of American life so complete as its architecture. For these reasons the exhibition of American architectural work now open at the galleries of the Institute is of the greatest importance. The selection is confined to buildings erected within the last twenty years by the leading architects of our time. The subjects are illustrated mainly by photographs of superb quality, and a few remarkable coloured drawings and lithographs. The hanging committee are to be congratulated upon the skill and taste they have shown in the arrangement of the pictures.

The present phase of architectural expression owes its beginnings to the firm of McKim, Mead and White, who commenced practice in 1879. For more than forty years this firm has produced designs for every class of building, in which great fertility of invention has gone hand in hand with profound knowledge of Italian work, until their ideals have been adopted by the great majority of American architects. The effect of this solidarity of thought is seen in the extraordinary high quality of the work being done at the present time. The whole country is steeped in the tradition of McKim, with the happy result that distinction in design is sought along the traditional lines rather than by traversing them.

A notable exception is in the work of Louis H. Sullivan (No. 10), which is so remarkable in its cleverness as to divert a few from the straight path. But the great majority work along the national lines, which are providing America with the finest modern buildings in the world.

It is well for us to recognise at once that American architects are more successful in the handling of the larger problems of design than we in England. This statement requires no qualification. The frank acceptance of the fact can be only beneficial, for it will lead us to a very careful examination of the work shown in this exhibition, and a reasoned consideration of the qualities by which it is distinguished. The time is opportune for such consideration, for London is being rebuilt, and there is a sense of uneasiness abroad as to the form that our new streets are taking—a misgiving that all is not well. It is good, therefore, that we should turn

our minds to the great achievements of America in architecture, so well represented here, and make a few blunt comparisons with conditions in England.

The New York Municipal Building (No. 43), by McKim, Mead and White, is frankly a "skyscraper," planned upon a site of extraordinary difficulty, but nevertheless a building of great beauty, and probably the most successful of the tall buildings in America. Seen from the Woolworth Tower opposite, with the charming old City Hall in the foreground, its graceful outline against the blue of the sky forms a picture not easily forgotten. Notice the expanse of the plain wall surfaces relieved with a diaper of window openings and crowned with a splendid tower between the twin roofs of the pavilions.

A striking contrast in height is the Morgan Library (No. 40), by the same architects. Here we have the proportions associated more closely with English practice, but no loss of dignity is involved. This little gem is one of those perfect works of art which must always be rare in any country. The combination of great delicacy in the detail with the most lavish decoration internally is to be noticed.

The Gorham Building (No. 33), by the same architects, is remarkable for its simplicity and admirable proportions. It is a modern shop building, on Fifth Avenue, that has had many imitators in the States ; and of its type it is as near perfection as has yet been reached.

But there is another reason for selecting it for special notice. It is 130 feet high to the top of the cornice, facing on a street 100 feet wide and a side street 60 feet wide. Such a building is impossible in London with the existing restrictions upon the height of buildings, and it is important that all who are interested in this subject should see this example of the proper use of freedom. Consider the eminently satisfactory shape it gives us—neither a "skyscraper" nor too low for good proportion. Is not the time ripe for some alteration in our own Building Acts whereby architects may arrive at the right height both for architectural treatment and for meeting the growing requirements of healthy commercial activity? There is a staleness creeping into our new streets. We see the endless repetition of ground storey, column, and attic, with two rows of dull dormers in the roof. There is a fixity about these compositions for which architects are unfairly blamed. How can the public know that the design they are criticising so freely is really a rectangular shape, defined by the building laws, which the architect has to fill in as best he can? This imposition of a height limit unrelated to architectural design or the width of the street is the greatest obstacle to fine street architecture. Alter the height limit but 20 feet, and a sense of freedom is gained, with astonishing results in freshness of design, as this exhibition proves. Until this is done we must be content to see other countries surpassing us, because they are unhampered by restrictions which strike at the very springs of thought, and put ideas at a discount from their source.

On the wall opposite is the great Temple of the Scottish Rite at Washington (No. 51), by that remarkable architect John Russell Pope. The finest Masonic Temple in the world, designed by a man who is not a Mason, it strikes a dramatic note that could scarcely be achieved in buildings for commonplace purposes. The artist has seized a unique opportunity to employ archaic forms in which to shroud the mystery without losing the element of surprise which underlies all great design. Look carefully at the interiors, and you will find this element is not lost, for every step of the way to the great chamber on the upper floor suggests architectural power and imagination of a high order. The wonderful colour drawing is worthy of the subject it illustrates.

To avoid the charge of praise without discrimination, we must look at the great New York Post Office (No. 37), which is rather a disappointment. The colonnade is strangely monotonous, and the flanking pavilions are quite unworthy of the building. The inscription, 300 feet long, over the principal front is something of a curiosity. It reads: "Neither snow nor rain nor heat nor gloom of night stays these couriers from the swift completion of their appointed rounds."

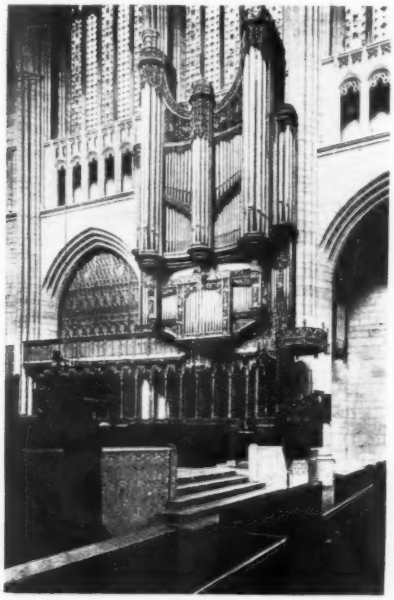
As E. V. Lucas has wittily remarked, Americans are remorseless when they are making themselves clear.

It is remarkable that a commercial country like America should have grasped the significance of the railway station as the gateway of the city. The Pennsylvania Railway Station (No. 28) is to New York what the great gateways were to Rome—they are related to the splendour of the city to which they give entrance. Nothing is permitted that would destroy the dignity of the first impression. Advertisements are rigidly banned, and even smoking is not permitted in some stations. A smaller example is the Richmond Station (No. 52), which has the same qualities of dignity with which the larger stations are marked ; and all over the States will be found the same desire to give the entrance to the city an importance that is proper to its function.

It is perhaps in office buildings that Americans differ most of all from the rest of the world. The conditions obtaining in some of the largest cities have forced them to adopt great heights, with a correspondingly difficult problem for the architects to solve. This problem has been completely mastered, as in the Municipal Building previously mentioned.

The latest of the high buildings is the Cunard Building (No. 116), which is interesting as an example of the application of the new zoning laws, which impose offsets at a certain height according to the district in which

No. 188.—Central Public Library, Indianapolis, Ind.
Paul P. Cret and Zantzinger,
Borie and Medary, Philadelphia, Pa.



No. 163.—Reredos, St. Thomas's Church, N.Y.
Bertram Grosvenor Goodhue, New York.

Murry Guggenheim Residence, Elberon, N.J.
Carrere and Hastings, New York.

No. 28.—Pennsylvania Railroad Station, N.Y., Main Waiting Room.
McKim, Mead and White, New York City.

No. 33.—Gorham Company's Building, N.Y.
McKim, Mead and White, New York City.

No. 39.—The University Club, Exterior View.
McKim, Mead and White, New York City.

No. 53.—Pan-American Union, Washington, D.C.
Kelsey, Albert and Paul P. Cret, Philadelphia, Pa

the building is situated. These offsets are cleverly handled, and rather add to the interest of the design than otherwise.

The exhibition contains examples of some of the finest banks in the States. No one should miss seeing the Guaranty Trust Building (Nos. 237 and 238), by York and Sawyer.

After looking at the banks, take a walk round London to see what we are doing, and it will be impossible to close our eyes to the fact that we are trifling away our opportunities for fine architecture. We have nothing to show which will compare with the great financial headquarters of New York and other American cities. We are deliberately creating banality on every hand by which future generations will remember us, and the only chance of escape is by realising it in time.

A matter of great interest to architects at the present moment is the design of store buildings, with which the West End of London is being liberally provided. The Gorham Building has already been mentioned. It has a near relation in the Lord and Taylor Store (No. 282)(see p. 45), the latest of the large buildings of this kind in New York. Notice the satisfactory solution of the shop-front problem, and the noble archway for entrance—the great plain mass of the upper storeys, in which the windows make a pattern and give the scale—the crowning cornice of excellent design. The interior shown is full of interest. The theatre, restaurant and roof garden indicate the resources of which such a building is capable, a complete community within the walls of a single store. The dignity of commerce is well expressed in these stores, many of which display no name of the firm. They are satisfied with a civic importance not less than the public buildings around them.

It will be noticed that the detail of the Lord and Taylor Store is small and delicate, in spite of the great size of the building. That very large buildings do not require coarse detail needs emphasis on this side of the Atlantic. Look at the fine Apartment House (No. 179) by Charles Platt, a building of very great size, with the utmost delicacy in the architectural features, and observe how the sense of scale is enhanced by great refinement.

It is fortunate that the exhibition includes the altogether delightful Pan-American Building at Washington (No. 53), now the headquarters of the International Conference on Disarmament. The architects, Messrs. Cret and Kelsey, may well feel proud of the importance that must henceforward attach to their fine work, the beauty of which cannot be without its effect upon the many assembled nationalities within its walls. It is a French building enclosing an open cortile of Spanish-American design, in which tropical plants and rare birds supply the colour and life, and suggest the range of climates embraced by the great North American Republic.

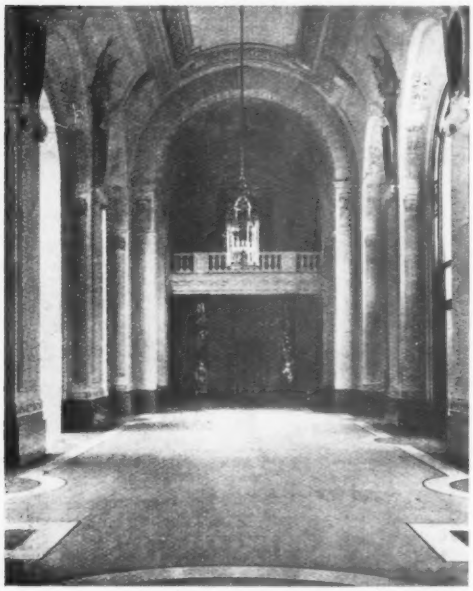
Of Gothic work it is difficult to speak with the same enthusiasm and assurance. The application of Gothic details divorced from Gothic construction in the tall buildings creates a sense of sham difficult to escape. With the single exception of the Woolworth Building, the Gothic "skyscrapers" are not a success. To see the flower of Gothic architecture in America we must turn to Mr. Goodhue's work in the three great churches he exhibits (Nos. 154, 155, 164). It was a remarkable experience to leave the noise of Fifth Avenue for the gracious interior of St. Thomas's Church, where behind a screen the great reredos (No. 163) was being built (1919), the sound of traffic subsiding into the faint tapping of the carvers' chisels as they fashioned mediæval saints in their high niches.

The same architect contributes a general view of the Panama-California Exhibition (No. 156) in a wonderfu drawing by Burdette Long. This is the most remarkable picture in the collection. It is a conception of fairyland produced in modern America, and it is only by the aid of photographs below that you can realise it is really built. One would not be surprised to see Don Quixote riding over that bridge to some amazing adventure in the city of dreams on the hill beyond. The most improbable things in Hans Andersen could happen anywhere in such surroundings. The Panama Canal itself is hardly more wonderful. American architects have a habit that is almost uncanny of rising to an occasion.

The domestic work shown should be of special interest to English architects, for in this branch of architecture England has long been supreme. Nothing in the exhibition will alter that position. The reproductions of typical English work in the States do not look right divorced from the surroundings natural to the style of our buildings; for it is our peculiarly English atmosphere and setting that have given us our domestic architecture.

There is another tendency in American design which should meet with greater success. It is the development of the old Colonial style, which owes much to the Brothers Adam on this side. In this manner some of the exhibits are admirable examples.

But perhaps the best of all the houses are those severe plastered fronts, with no expression of a period other than their own. Here is no echo of dead forms, however gracious, but a straightforward sense of comfort and spaciousness. The absence of mouldings will be noticed, the simple tiled roofs with great eaves. There are too many of these for special mention, but Nos. 139, 144 and 160 are typical. It is refreshing to feel that books have been put aside, and copies of English villages no longer persisted in; but a real American expression given to American homes. It is along these lines alone that they can attain to the excellence which marks their great achievements in the larger problems of design.



No. 55. PAN-AMERICAN UNION, WASHINGTON, D.C.
Kelsey, Albert and Paul P. Cret, Philadelphia, Pa.

No. 113. LANGDELL HALL, HARVARD LAW SCHOOL, CAMBRIDGE, MASS.
Shepley, Rutan and Coolidge, Boston, Mass.

No. 154. EXTERIOR, CHAPEL OF THE INTERCESSION, BROADWAY AND 155TH STREET, N.Y.
Bertram Grosvenor Goodhue, New York.

No. 129. FIRST CONGREGATIONAL CHURCH, RIVERSIDE, CALIFORNIA.
Myron Hunt, Los Angeles, Cal.

American Exhibition

OPENING CEREMONY.

SPEECH BY LADY ASTOR, M.P.

On Wednesday afternoon, 23rd November, the Hon. Lady Astor attended to perform the opening ceremony, in the presence of a large and distinguished company.

Lady Astor was received by the President, Mr. Paul Waterhouse, and members of the Council, and, after a brief introduction by the President, said :—

Sir, ladies and gentlemen,—I have great hesitancy in coming to open so wonderful an exhibition, especially after reading what Mr. George Moore says about politicians and aristocratic patter. I did not feel very happy then, and I feel less happy to-day after receiving a letter from a great friend, in which he wrote : " Kind regards, and apologising for suggesting speeches to such a nimble wit as yours, but I did not feel you were quite on your own ground the last time I heard you talking about arts and crafts." That, I say, did not help me. Then he says : " As it is about as difficult to get honest architecture as honest anything else to-day, can we suggest that you propose to them that there should be a ten years' style holiday, like the ten years' Naval holiday, and that architects give up plastering classical mouldings over buildings during that period, and really try and consider modern materials and modern ways of building ? " That is for the architects. And here is another thing, which I am afraid will discourage the young men : " Another thing you might say to them is that no architect should ever be allowed to build a family house until he is married and has had three children, and then he must submit the plans to his wife first. I speak feelingly." So you will understand it is with a feeling of great hesitancy I am here before you ; but I am delighted to be connected with anything of this kind, and though, as my friend says, I do not feel very much at home when talking of arts and crafts, yet I do feel very much at home with you in this exhibition of the work of American architects, because I knew Hastings, and McKim, and Stanford White well ; they were—some are still—geniuses. And I think we have much to learn, in the way of public buildings, from them. I was never more amazed when I returned to America than to see the beauty of the stations. That is modern architecture. But there is one thing I do not think they have in America so good as we have in England. The outsides of their houses may be more beautiful, but I defy anyone to make the insides of their houses as comfortable as the British.

I will say nothing more, except this : that women do feel very strongly about architecture, because they have got to build up the characters inside the home, as the architect has to build up the characters of the people who pass by and look. They both go together. I hope to-day that this will help us here in England to see what can be done in the way of public buildings. We have got wonderful monuments of the past, but I am afraid some of our modern buildings are not quite up to the mark in comparison with some American. But we may take comfort from the fact that what really matters is inside, and no one can beat the British in that.

Now I have pleasure in declaring this Exhibition open.

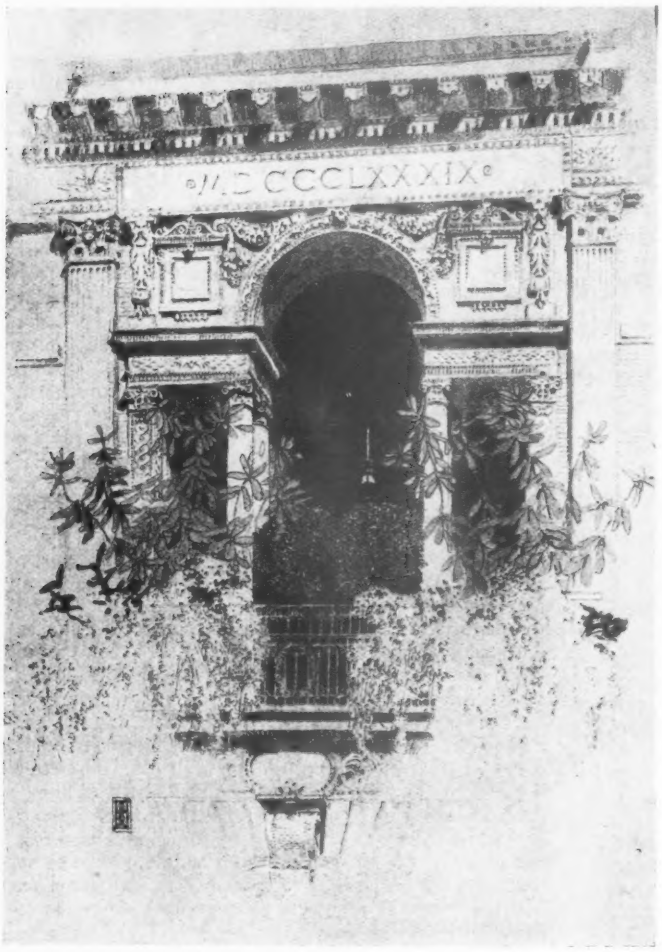
The PRESIDENT : I am sure you will allow me, ladies and gentlemen, in a few words to express first our thanks to Lady Astor for all that she has so graciously done. I am sure that by this time Lady Astor is tired of being reminded that she is the first lady M.P. : she will prefer to be regarded as an ordinary legislator with an extraordinary power. It is a delight to me to realise at this exhibition—as I always have realised, but now more fully than ever—that architecture in America is more European than Europe ; it symbolises the great brotherhood between us and the American past.

I will ask General Seely to be good enough to second the vote of thanks.

GENERAL SEELY, M.P. : I think it is a fortunate thing that we have got this exhibition of American architecture here, and that Lady Astor has been asked to open it, because as a student of architectural affairs, and as a father of a family of more than three, one of whom has considerable architectural genius, I think we have much to learn from America, and, as you have been good enough to indicate, Lady Astor, America has a good deal to learn from us. And the more we see of them, in architecture and in everything else, the better it will be for the world. But it is especially in architecture, where our paths have been so divergent, producing such extraordinary varieties of style and thought in this the greatest of the Arts, that it is high time we came together and made common cause in this, as, I suppose, in other things. I beg, with all respect, in the midst of this distinguished company, to second the vote of thanks to Lady Astor for having declared this Exhibition open, and I will ask the President to put it to the meeting.

LADY ASTOR, M.P. (in reply) : People talk about uniting the countries ; I think America and England should remember that it is taste that unites countries, not treaties. The Americans and the English have the same ideas about home, and I think that is what is uniting races more than anything else. It is uniting our two races and making us as a beacon light to all other races ; and so architects coming together is just American and English thoughts coming together to construct everything which will be permanent and beautiful, I hope.

The PRESIDENT : There is a most interesting public meeting to be held here at 5 o'clock on Friday



THE CENTURY CLUB, N.Y., 1891.
McKim, Mead and White, New York City.

next, when the great American architects Mr. Goodhue and Mr. Barber, will address the meeting; and I hope all who are here will take the opportunity of coming, and inviting their friends to do so, the notice being so short.

STUDENTS' EVENING AT THE AMERICAN EXHIBITION.

Arrangements have been made by the Board of Architectural Education for holding a Special Students' Evening in connection with the Exhibition of American Architecture on Friday, 2 December, at 8 p.m. Several prominent architects, familiar with recent American work, will be present and give students information on points of interest. An opportunity will be afforded students of gaining an insight into the trend of thought and methods of American architects. Students from the Architectural Schools and others are invited to be present. No cards of admission are required.

MR. WALCOT'S ETCHINGS.

At Monday's meeting, on the motion of the President, a vote of thanks was passed to Mr. William Walcot and his publishers for the presentation of a complete set of framed etchings of his classical compositions. In moving the vote, the President said: "Nearly all of you know something of Mr. Walcot's work as an architectural artist; he stands alone in this respect; the presentation comprises some of his reconstructed representations of the citizen life of Rome, Athens and Egypt."

FEES FOR HOUSING WORK.

On the recommendation of a Joint Meeting of the Practice Standing Committee and the Committee of Housing Architects, it was decided to summon a Special General Meeting to consider the proposals of the Joint Meeting for resuming negotiations with the Ministry of Health.

THE SOUTH WALES INSTITUTE OF ARCHITECTS.

The new rules of the South Wales Institute of Architects have been approved by the Council of the Institute.

NEW ALLIED SOCIETY.

The Norfolk and Norwich Association of Architects have been admitted as an Allied Society of the R.I.B.A. under the provisions of By-Law 78.

RESIGNATION OF MEMBER.

Mr. John Pain Clark has resigned his membership as an Associate.

BUILDING RESEARCH BOARD.

The Science Standing Committee of the Royal Institute of British Architects, having received an invitation from the Director of Building Research to pay a visit of inspection to the Experimental Station of the Board at Acton, accepted the invitation, and arranged a special meeting of the Committee for Thursday, 24 November, at the Experimental Station.

Reviews

ÉCOLE NATIONALE DES BEAUX ARTS. *Concours pour le Grand Prix de Rome d'Architecture. 9 plates, folio, Paris, 1914; 15 plates, folio, Paris, 1919; 4 plates, folio, Paris, 1920.* [*Armand Guérinet, 140 Faubourg St.-Martin, Paris.*]

These designs are the fine flower of the Beaux Arts teaching and the outcome of the tradition of at least a century.

The number of subjects suitable for the different competitions is, of course, limited, and they recur at more or less regular intervals; thus a student before going into "loge" to make his preliminary sketch can often give a shrewd guess at what subject will be set, and will look up in the books what has been done in former years and base his design thereon. A *lycée*, for instance, can be traced back probably to the time of Napoleon I., and a comparison of its reincarnations during the century would be most instructive; indeed, it is unfortunate that we have not in the Library some illustrations of the Prix de Rome designs of 100 years ago to put beside the present series—the contrast would be striking! As the years pass these designs seem to have less and less relation to reality, and one wonders when the constant crescendo of extravagance, lavish accessories and gorgeous *mise en scène* will stop—surely the 1920 monument to Victory, with its crowning figure which, in the absence of a scale, looks about the height of the Eifel Tower, is the crest of the wave!

It takes eight or ten years' hard work to make a Prix de Rome man, and when he is made his executed work bears very little resemblance to anything he did at the school—you have to go to America to see a Beaux Arts "projet" materialised. The writer owes too much to the French School to attempt to belittle its fine traditional teaching, but this seems to him to be in danger of being stifled by sheer dexterity of presentation; the Frenchman appears able to assimilate the kernel and reject the husk, but the foreign student too often emerges from the course exceedingly "husky."

If it be well that our young men should see visions, may not an old man dream dreams of a return to sobriety and common sense?

CHARLES E. SAYER [*A.*].

THE SITE OF THE GLOBE PLAYHOUSE, SOUTHWARK. *With an Appendix by the Architect to the London County Council.* [*Published by the London County Council.*]

The whole point of the recently published L.C.C. report turns on the question as to whether the Globe was on the north or south side of a lane then known as Maiden Lane, and now known as Park Street, Southwark. The point is not a very vital one; but as the L.C.C. have come to the conclusion that the theatre was on the south side, I do wish to enter my protest, as the contemporary evidence clearly shows that it was on the north.

I am anxious to indicate one or two particulars showing the error in the judgment and decision of the L.C.C.

It will be generally agreed that the contemporary evidence is the best evidence. Those who actually saw the theatre and wrote about it, and even went so far as to define its boundaries in a legal document, and also those who saw the theatre and drew it amidst its surroundings in the map-views of the period, are more likely to be right in matters of fact than a committee of the L.C.C. sitting some three hundred years after the theatre was pulled down.

Now the chief amongst the contemporary documents is one which may be called "the lease transcript dated 1616."

This document was drawn up in consequence of a family dispute amongst those who had an interest in the profits of the theatre. It became necessary for the attorney to recite the boundaries of the land leased by Nicholas Brend to Cuthbert and Richard Burbage, William Shakespeare, Augustine Phillips, Thomas Pope, John Hemyngs and William Kemp.

Within boundaries of the land so leased the Globe Playhouse was built. The land is described as abutting "upon Maiden Lane towards the South." The theatre must have been on the north side of the road, as otherwise it could not have abutted upon Maiden Lane towards the south. This portion of the document, if taken by itself, would unquestionably settle the question; but the L.C.C. find in it a "serious difficulty." The document also says that the land abutted upon a piece of land called the "Park" on the north. Now the only piece of land the L.C.C. know of as the "Park" is the Lord Bishop of Winchester's Park, which is to the south of Maiden Lane. Hence, if you please, the L.C.C. jump to the conclusion that the attorney, in drawing up the lease transcript of 1616, mistook north for south and east for west, and the document should in consequence read as though the land abutted upon Maiden Lane towards the north and the Park towards the south. By this topsy-turvy line of argument the whole site is transferred from the north of Maiden Lane to the south.

But the argument is not sound.

(*a*) If the Bishop's Park had been intended, it would be described as "the Bishop's Park" in this legal document as in others of the period.

(*b*) Is it in the least likely that neither Nicholas Brend, the lessor, nor Cuthbert and Richard Burbage, William Shakespeare, Augustine Phillips, Thomas Pope, John Hemyngs and William Kemp, the lessees, should have signed the original lease and not have detected the error in the orientation? They were all

men of affairs, and it must be presumed that they understood and knew what they were signing. But the fact that there was some land lying to the north can be supported by other contemporary documents; but the evidence as shown in (*a*) and (*b*) is alone sufficient to dispose of the hypothesis advanced by the L.C.C. as to the mistake in the orientation. Now here is another point which will be more readily appreciated by architects than others, and it is conclusive as to the accuracy of the lease transcript of 1616. Maiden Lane had two ditches or sewers, one on the north side of the lane and one on the south side. The frontagers on the north had to keep their sewer clean and in order, and a like responsibility fell on the frontagers on the south side.

The Surrey and Kent Sewers Commission, on 5 December 1595, ordered one Sellers (whose name must not be forgotten, as he will again be referred to shortly) to carry out certain work in connection with the northern sewer. The order stands as follows :—

" William Sellers and all the land holders or their tenants that holde anie landes, gardeins, ground or tenements abutting upon the common sewer leadinge from Sellers gardein to the Beare Gardein to cast, cleanse," etc.

Now, the L.C.C. state that the Bear Garden was on the north side of Maiden Lane, and in this I agree. But if the Bear Garden is on the north side, then Sellers' garden must be on the north side also, for it is the sewer between his garden and the Bear Garden that required attention.

If this logical reasoning is accepted, then there is no escape for the L.C.C. Sellers in the lease transcript of 1616 is mentioned as being on the eastern boundary of the land leased by Brend to Burbage, Shakespeare and others. We have seen that Sellers was on the north side of the road, and, as he adjoined the Globe site, it follows that the Globe must have been also on the north side, unless both these documents are wrong.

If further evidence is required, another minute in the Surrey and Kent Sewers Commission may be quoted. On 14 February 1605–6 the Commission made the following order : " It is ordered that Burbage, John Hemings and others, the owners of the Playhouse called the Globe in Maiden Lane shall . . . pull up and take cleane out the sewer, the props and posts which stand under their bridge on the north side of Mayd Lane."

What could be more convincing and conclusive ?

I should like also to refer to the map-views of the period, though their evidence is dismissed by the L.C.C. in a short footnote as follows :—

" In view of the unreliability, in matters of detail, of the early map-views of London, the evidence on both sides is limited to the evidence of documentary character."

Now the evidence of these views is particularly clear, unanimous and conclusive, and why Mr. Topham Forrest should have given us this purely imaginary sketch of the surroundings, when he might have followed such a view as Agas's, dated 1616, is a little hard to understand.

These two views, side by side, should be examined for the purpose of observing the topographical differences between them. Of course, one explanation may be that Agas's view would not accord with Mr. W. W. Brain's report, and the same might be said of " Londinum Urbs precipua regni Angliæ " Merian's view of London, Vanden Heoye's view, " Profil de la ville de Londres " by Picart, F. de Wit's view of London, Hollar's view.

Seeing that all these views show the Globe and name the building by an inscription written above it, or, alternatively, they print an index number above the building, which by reference shows the Globe Playhouse is intended, their direct evidence should have been considered.

All these views were either drawn during the life of the Globe or published shortly afterwards, and, without one exception, they show the Globe to be north of Maiden Lane. It seems rather extraordinary that, because the views may be unreliable in matters of detail, their evidence, in this unprejudiced inquiry, on a matter of some importance should be discarded.

There is not a single view, so far as I know, that places the Globe on the south side of Maiden Lane, nor is there a single contemporary document which places it there. GEORGE HUBBARD [*F.*].

ARCHITECTURAL RENDERING IN WASH. *By H. Van Buren Magonigle, F.A.I.A., with a preface by Thomas R. Kimball, F.A.I.A.* 40, *New York*, 1921. £1 12*s*. [*Charles Scribner's Sons, New York.*]

This book gives better than any other the information required by the present-day architectural student. We already know Mr. Magonigle as an architect, and here he is revealed to us as both an author and a draughtsman.

Many questions of materials, properties of pigments, and methods of procedure are here discussed. The author gives his own working palette and those of artists like Jules Guérin, Paul Cret and Otto R. Eggers, and attempts to lay down rules for a clear and accurate presentation of architectural design. These rules, based in the main upon a detailed study of Beaux Arts methods, represent the manner at present established for rendering both in America and in a lesser degree here in England.

The value of such attention to fine drawing and accurate presentation towards the production of fine architecture is to be seen not only in the author's own essays in building, but in American architecture in general. H. CHALTON BRADSHAW [*A.*].

The Temple Door in Vitruvius

BOOK IV, CHAPTER 6.

The passage in Vitruvius describing the method to be followed in setting out the paneled door of a temple is as follows* :—

Fores ita compingantur uti scapi cardinales sint ex latitudine luminis totius XII parte. inter duos scapos tympana ex XII partibus habeant ternas partes. inpagibus distributiones ita fient uti divisis altitudinibus in partes V, duae superiori, tres inferiori designentur. super medium medii inpages conlocentur, ex reliquis alii in summo alii in imo compingantur. altitudo inpagis fiat tympani tertia parte, cymatium sexta parte inpagis. scaporum latitudines inpagis dimidia parte, item replum de inpage dimidia et sexta parte. scapi qui sunt secundum antepagmenta, dimidium inpagis constituantur. sin autem valvatae erunt, altitudines ita manebunt, in latitudinem adiciatur amplius foris latitudo. si quadriforis futura est, altitudo adiciatur.

This passage has been variously interpreted in the notes and illustrations of different editors. But however much these interpretations differ in other details, they all agree in making the door only two panels wide ; and then with difficulty, by more or less ingenious devices, barely succeed in making it just wide enough to fill the opening. If, however, any value attaches to the obvious meaning of *antepagmenta*, the word used to indicate what we call the door case, or to the evidence of remains of ancient doorways, the door must be wider than the opening ; for it was hung (or pivoted) in the recess behind the *antepagmenta*, and overlapped them on both sides. There are also objections to the device common to all these interpretations—without which no ingenuity could make a door two panels wide fill the aperture—of taking the second sentence to mean that the breadth of the panel was to be three-twelfths of the whole width of the opening. Firstly, that is not the natural meaning of the words, especially when the *totius* of the first sentence is taken into account ; and, secondly, it makes the operation to find a unit of measurement a useless absurdity. For the width of the rail then becomes again just a twelfth of the width of the opening, the same as that of the pivot style which has already been set out, and which might just as well be used as the unit. Another common device is to give the door two styles in the middle, which can only mean folding doors, an interpretation forbidden by the penultimate sentence of the passage. Newton, it is true, tries to get over this objection by suggesting that *valvatae* may mean three-fold ; but, apart from inherent improbability, the folding, or double, door meaning is too well established by reference to other writers to be easily questioned.

A single door, four panels wide, is not open to any of the above objections, and, curious as it may appear at first sight, when set out as specified it fits the aperture within a one hundred and forty-fourth part of the width, and allows for the overlap behind the *antepagmenta*. The dimensions work out thus : deducting two-twelfths from the total width of the aperture for the *scapi cardinales*, there remain ten-twelfths, or 120 one hundred and forty-fourths. The panels are therefore 30 one hundred and forty-fourths each, the rails 10, and the styles 5. The parts of the outer styles, or *scapi cardinales*, showing in front next the *antepagmenta* (*secundum antepagmenta*, or, as the principal MSS. have it, *ante secundum pagmenta*) are also 5. There are therefore four panels at 30 each and five styles at 5 each, making 145 one hundred and forty-fourths, and leaving 7 one hundred and forty-fourths for overlap on each side, being the width of the outer style in excess of what shows in front. This appears to be sufficiently exact : for joiners who can work to the twelfth of an inch in the foot are not often found among the unemployed. It is possible that the overlap is what Vitruvius calls *replum* (a word which my dictionary says is of doubtful meaning), although in the text it only works out at $6\frac{2}{3}$ one hundred and forty-fourths instead of 7. The word must be connected with *repleo*, to make up, or with *replico*. In the latter case it might mean what goes back (into the recess), or what overlaps.

A curious point in the setting out is the narrowness of the styles and rails, the former being but a sixth of the width of the panels, and the latter a third ; so that a twelve-inch panel would have but two inch styles and four inch rails. But if we make the reasonable assumption that the *cymatium*, mentioned in connection with the rail, is a moulding all round the panels, run on the solid of the framing, and adding to the width of its members, their breadth becomes sufficient for a hardwood door, probably rather thicker than we are now accustomed to. The extra width does not affect the setting out ; for the panel groove must be taken into account and may be assumed to be as deep as the moulding is wide : that is also a sixth of the rail.

FRANK T. BAGGALLAY [*F.*].

* Rose and Müller Stübing's text.

PROPOSED INSPECTION OF PUBLIC BUILDINGS.

In view of recent accidents to public buildings resulting in loss of life, a Committee of the Association of Municipal Corporations is considering the desirability of some system of periodical inspection of public buildings. At the invitation of this Committee, the Council of the Institute have appointed two representatives, Mr. H. T. Buckland, of Birmingham, and Mr. E. Stanley Hall, of London, to meet the Committee and discuss the question with them.

The Library

NOTES BY MEMBERS OF THE LITERATURE COMMITTEE ON RECENT ACQUISITIONS.

[*These Notes are published without prejudice to a further and more detailed criticism.*]

EUGENIO OLIVERO: Le Opere di Bernardo Antonio Vittone, Architetto Piemontese del Secolo XVIII. Turin, 1920. 3s.

An account of the life, writings, and buildings of Vittone (d. 1770), an architect with a large practice in Turin and Piedmont during the middle half of the eighteenth century. The work opens with a study of Piedmontese life in the 16th Century. Then follows a lengthy description of the two books that Vittone produced, like every other architect of his day. These four stout quarto volumes contained "elementary instructions for the young in architecture" and "the rules of architectural practice." They were prefaced by the usual fulsome dedication, contained the usual engravings, and are said by the modest biographer to include "everything that an architect and engineer need know." Vittone built many churches and palaces in Turin and its neighbourhood. They display the Rococo tendency that followed the Baroque in Italy, especially in Piedmont, but some of them have interesting detail, and the striking church plans—oval, octagonal, and so on—contain much "inspiration" for modern borrowers. M. S. B.

ITALIA ARTISTICA: Catania; Orvieto; Taormina; Napoli; Sorrento; Livorno; Bagni di Lucca, Coreglia e Barga. 7 vols. 4o, Bergamo. 4s. 6d. each.

These seven volumes are not all recent, but have been added to the Library to fill blanks in a large and well-known series of monographs now including every Italian town or district of any artistic importance. All are the work of competent writers, and are splendidly illustrated. To an architectural student who can read Italian they are invaluable, for they give the art history of each town in convenient form, and illustrate every notable monument. Plans of buildings are not included, but there are reproductions of old prints, in addition to photographs of architectural detail, sculpture, paintings, and landscape. M. S. B.

ARCHITECTURAL OFFICE ADMINISTRATION. By Francis Lorne, A.R.I.B.A. 8o, Lond. 1921. 5s. [Technical Journals, Ltd.]

The object of this book is to give the student a grasp of modern business methods and office administration. It contains a number of specimen time sheets, forms for registering dispatch of drawings, etc., and valuable hints on the importance of keeping written records of all interviews and instructions given and received. E. S. H.

ALT-DÄNEMARK. By Dr. Edwin Redslob. 4o, Munchen, 1921. 15s.

A book dealing with the little-known Renaissance of Denmark cannot fail to be of value as a supplement to our information of the Renaissance in Northern Europe. The illustrations are good, and many of the buildings shown will stand comparison with those of the better-known work of the Renaissance in this country and in France. S. C. R.

THE ART OF DRAWING IN LEAD PENCIL. By Jasper Salwey. 8o, Lond. 1921. 10s. 6d. net. [B. T. Batsford, Ltd., 94 High Holborn, W.C.]

A charming book on a charming subject, treated withal in a thoroughly practical manner.

The numerous illustrations are well chosen and beautifully reproduced, and will be a revelation to most of us of the perfection to which the recent revival of the art of pencil drawing has attained.

It is interesting to note how well the architects show up in this collection, and not least of them the author.

C. E. S.

Prof. Groom on Dry Rot

By W. E. VERNON CROMPTON [*F.*].

I suggest that something more than formal notice should be taken of the Chadwick Public Lecture given in the gallery of the R.I.B.A. on 3 November last by Professor Groom on "Dry Rot of Wood and Sanitation," with Mr. John Slater, one of the Chadwick trustees, in the chair.

I do not think it would be going too far to say that this lecture marks a definite stage in the question of dry rot in its relation to architects and their work.

When the R.I.B.A. was asked in 1915 to meet the Committee of the Privy Council for Scientific and Industrial Research for the purpose of drawing its attention to matters which architects thought were of sufficient importance to form the subject for research, dry rot was the first subject to which the Committee's attention was drawn; and I well remember the look of surprise that spread over the face of the chairman, Sir William McCormick, when it was pointed out to him that Germany considered the matter of sufficient importance to warrant the expenditure of £40,000 upon an institute at Jena devoted to research into the destructive action of fungi upon timber.

Not having heard recently about this institute, I was beginning to fear that it might be a war myth akin to the passage of the 80,000 Russians through England and the Angels at Mons, but Professor Groom referred to its existence in his lecture, and confirmed the fact to me afterwards.

Further, the Germans appear to publish annually at Jena a volume called *Hausschwammforschungen* (House fungus investigation), which attained to its sixth volume in 1912.

These facts are mentioned to substantiate what has been said above, that this question of dry rot should be held to be of very considerable interest to architects and of importance to the country.

Professor Groom commenced by defining dry rot and explaining its causes, most of which are known to architects.

In speaking of the great wastage of timber, he referred to statistics kept in the U.S.A., from which it had been calculated that if wood were adequately protected against fungoid type of decay, the annual saving would be 7,000,000,000 board feet of timber.

As might be expected, there were no statistics available in this country to determine the annual waste, a wastage that was likely to increase because the timber in daily use had not the resisting qualities of timber a generation or more ago, owing to inadequate seasoning and to the depletion of the forests; smaller timber having a larger proportion of sap wood being thrown upon the market.

By means of slides the lecturer explained the growth and described the characteristics of *Coniophora cerebella*, *Polyporus vaporarius*, and especially of *Merulius lacrymans*—or *domesticus*—the true dry rot, which is so virulent that it is able to eject some 500 million spores in ten minutes from about a square yard of fungus.

One of the most interesting points made by Professor Groom was the fact that the spores of *Merulius* will infect wood only after it has been attacked by some other species of fungus.

He himself had found it impossible to germinate spores upon clean wood, but had been able to do so upon wood that had previously been attacked by *Coniophora cerebella*.

Apparently, then, the only way clean timber can be attacked is by the established plant spreading its lacelike mycelial tendrils over sound timber. But the very fact that there is a double enemy within the gates working hand in hand adds to the complexity of the problem, and should not be viewed with complacency by architects.

It raises the question at once as to whether unclean forestry may not be a source of dry rot.

Professor Groom appears to think it an established fact that the fungi causing grave dry rot are different from those attacking standing trees, but it would be interesting to know whether any of the fungi which attack the live tree may be like *Coniophora cerebella*, the precursor of dry rot.

If so, the present legal position as regards architects' responsibility would be Gilbertian in its humour if it were not so serious.

Professor Groom came to the end of his hour's lecture without dealing with the legal aspect of the matter or with the question—equally interesting to architects—of the antiseptic and toxic treatment of dry rot, but at the suggestion of the chairman he touched upon the subject for a few minutes.

Many treatments were mentioned, more or less efficient, including our friend corrosive sublimate, and also dinitrophenolate of soda. This latter is recommended by Flack as the most powerful and cheapest fungus poison.

From enquiries made by the writer, the price of dinitrophenolate of soda is about the same as corrosive sublimate, with the advantage, according to Flack, that one-twentieth of the quantity of the former need be used as compared with the latter.

The suggestion, however, is not practicable at present, as, although large quantities of dinitrophenol are made, the soda salt is not commercially obtainable, but would have to be made specially.

This could be done, and a stock could be kept if there was likely to be a demand ; but if the proportions advised by the German investigator are correct, the anxious architect would only require an ounce at a time of this chemical with the long name.

It is therefore to scientific experts like Professor Groom that we must look to tell us whether it is worth while to stir up the manufacturing chemist to make something for us specially, or whether corrosive sublimate and other things commercially obtainable are not sufficient for the purpose, even if the cost is a little more.

DRY ROT IN PARTITION.

It is interesting to note that in the use of corrosive sublimate the German practice seems to be 1 part in 1,000, whereas our rule of thumb appears to be 1 ounce to a gallon, which is 1 in 160.

I suggest that ordinary dry fresh air is perhaps one of the best things to make use of in combating dry rot. The accompanying illustration of dry rot in a partition is an excellent example of this.

When the plaster work was removed the timbers were hardly visible on account of the fungus. The weather was dry and windy, and there was no sash in the window opening.

The photographs were taken within 24 hours, during which the growth had shrivelled up very perceptibly: in three days the dry rot was withered and shrunken past recognition, and although the fungus was, of course, still full of life, the fresh air almost seemed to have blasted it.

Professor Groom is to be congratulated upon obtaining an individual grant from the Committee for Scientific and Industrial Research with respect to the further investigation of timber diseases.

The investigation could not be in better hands, and seeing that no objection is raised by the Privy Council to a research worker publishing the results of his research from time to time as he thinks fit, it is to be hoped that Professor Groom may be asked to continue his lecture at the R.I.B.A., and deal more specifically and in detail with those points which are of peculiar interest to architects.

In addition to the legal position and the use of preventatives and toxic materials, one would like to hear more :—

(1) As regards the way in which each species reacts to various sterilising media, for I suggest that it is by no means certain that what is sauce for the goose is sauce for the gander.

(2) As regards the partiality of various kinds of fungus for various kinds of timber.

(3) As to whether *Merulius sylvester* and *Merulius minor* require any attention—they are mere names to me.

(4) Whether it would be possible, by inoculation of the tree in the forest in the spring before felling, to render it reasonably immune from fungoid disease afterwards. I know that botanists are not encouraging as to this, but the investigation might be worth making.

This, perhaps, is more a question of forestry, but being so it shows that the treatment of the live and dead tree cannot be regarded as entirely separate investigations.

In conclusion, I cannot help thinking that there was something in Mr. A. O. Collard's question as to whether it would not be possible for architects to send their dry rot samples and questions to some competent authority for examination and advice. Architects are not all-round scientific experts, and Professor Groom is doubtless much too busy to add to his programme; yet in any decently civilised and organised community bad and important cases of dry rot would come automatically before the scientific expert who specialises in such matters: this is doubtless a counsel of perfection.

Correspondence

REGISTRATION AND UNIFICATION.

Guildhall, E.C.
17 November 1921.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—I was one of the men who voted in March 1920 for the general principle of Registration and Unification. Members were informed at that meeting by the President that " the Resolutions before the Meeting did not commit them to any definite scheme or policy, but merely provided the machinery for preparing and submitting one to the Institute."

I am glad to see Mr. Keen's letter in the JOURNAL of the 12th inst., but I do think he might have given us a little more information, which, however, I am happy to supply.

Under the 1914 scheme (which is printed in the R.I.B.A. JOURNAL of 31 December 1913, page 429) a Register was to be formed including men who were not members of the R.I.B.A., and the fact that they would be on the Register *would not make them members of the R.I.B.A.* But the scheme of the Unification and Registration Committee is vastly different, for that Committee wants us to approve " the principle of . . . bringing all the architects of the United Kingdom into membership of the R.I.B.A."

This proposal has never been submitted to the general body of members, and cannot be carried out until it is and until we approve it. It is not a matter for the Council to decide, and, judging from the large number of letters I receive from all parts of the kingdom, the opposition will be considerable, and I think Mr. Keen will find that Mr. Hiorns' remarks *do* " represent the feeling of many of our members in relation to this matter," only they express themselves much more forcibly.

Mr. Keen states that it is not intended to admit men " without reference to their qualifications," so I presume we may rely on his voting against the resolution I quote above, for it makes no reservation on the point he considers so important.

" The R.I.B.A. Constitution League " has been formed to oppose the admittance, before the passing of a Registration Act, of new members to the R.I.B.A. except in accordance with the present system of examination; our views are fully stated in the JOURNAL of 27 August 1921, p. 556. We are not opposed to Registration. Any member writing to either of our Vice-Presidents, Mr. A. W. S. Cross or Mr. H. D. Searles-Wood, or to Mr. George Hubbard or myself, can automatically become a member; there is no subscription. Associates are particularly invited to join, as their position is so critical under the scheme. We have only had three meetings and already have a hundred members.—Yours obediently,

SYDNEY PERKS [*F.*].

UNIFICATION AND THE INSTITUTE.

St. John's Wood, N.W.3.
16 *November* 1921.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—Mr. Keen has dealt quite kindly with me. I value his and others' opinions too highly to wish to be misunderstood and appear either obstructive or unfair. I can at once agree as to the general desire at the Institute for the registration of architects—which I had no intention of questioning—and to what appears to me to be the willingness of members to assist in effecting what the majority desire. As perfectly reasonable people we want an end to disagreement and controversy. It did, and does, however, seem to me debatable whether the admission of *all* architects into the Institute (which was what the Council was understood to approve) could be recognised consistently with the aims and principles we profess; and, casting a side-glance at De l'Orme's "bad architect"—whom obviously our Register, when it comes, is intended to destroy—it struck me that one aspect, if only a limited one, of the Council's scheme savoured of smiting the poor man with one hand while offering him a diploma with the other, though, sad to say, the charming woodcut shows that, being without hands, as well as blind, he is in no position either to resist or accept. And there is no doubt in my mind that inclination would lead me to spare him the necessity to do either.

Mr. Keen will not need me to say that the anxiety some of us feel in the matter is perfectly genuine, and results from the same sense of pride in the Institute that he undoubtedly has himself. I gather comfort from his assurance that the points which cause us concern are being fully considered by those dealing with the matter. And I hope that Mr. Keen is one of them, for we do not fail to associate him with whatever is best.—Faithfully yours, FREDERICK R. HIORNS [*A.*].

THE GOVERNMENT'S FUTURE HOUSING POLICY.

15 *New Bridge Street, Ludgate Circus, London, E.C.4.*
17 *November* 1921.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—I shall be grateful for permission to trespass upon your space for a few lines (final as far as I am concerned) by way of reply.

Referring to Mr. John E. Yerbury's letter of 27 September, I never suggested that "we should not criticise the Government unless we are prepared to do their work," but I meant it to be implied that if the Government Housing Scheme were scrapped there was no prospect of the necessary houses being provided by existing agencies under existing conditions, and that a practical alternative scheme had not only to be devised, but (more important and difficult still) brought into operation.

Moreover, will not architects as a body demur to Mr. Yerbury's suggestion that the provision of housing is work for the Government and not for us?

My letter of 30 August (September JOURNAL) was inspired by (to quote Mr. Yerbury again) "the bald and bold statement" (which he says "neither the Council nor any individual architect has made") in Mr. James Ransome's letter of 26 July (July JOURNAL) in which he advocated "insistence upon freedom of private enterprise to erect such houses as our countrymen need and can afford to possess," unqualified up to then by his suggestions of 6 October (October JOURNAL).

My letter was deliberately intended to provoke criticism, in which it has succeeded, with some advantage, I hope, but I fear without much prospect of any practical result.

There appears to be general agreement with my postscript (that the provision of sufficient houses must wait for a drastic reform of our whole system of local taxation, etc.), which I did not write with surprise, as Mr. Yerbury assumes, but rather with a feeling of consternation amounting almost to despair.

Mr. Yerbury makes a very strong case against the Government for its neglect of information at its disposal, but disregard of valuable (and often very expensive) reports embodying expert opinions has always been a besetting weakness of Governments.

The upshot is that the only hope of putting the supply of houses on a satisfactory footing involves important legislation of a controversial character, material for which exists, but is buried in departmental pigeonholes.

To repeat my former question in a somewhat different form: Is it not a most urgent duty of the Institute and the profession to press this upon public attention, and to continue to do so until the Government takes effective action?

Even Mr. Yerbury at the end of his letter makes suggestions which must in effect fall into line, in spite of the adverse criticism in his opening paragraph.

Unfortunately, the architectural and allied professions seem to lack power such as the legal and medical professions occasionally exercise to influence Governments in the right direction.—Yours faithfully,

ALEX. P. DURLACHER [*F.*].

DOMINION BRANCHES OF THE INSTITUTE.

14 *Phillips Square, Montreal,*
3 *November* 1921.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—In the September issue I see a letter from Mr. G. A. T. Middleton, under the caption "Why Not Dominion Branches of the Institute?" The reasons why not are so numerous, so obvious to members of the Institute outside the British Isles, so

obscure to many of those " who only England know," that I should have to trespass on many of your valuable columns if I tried to answer fully the question with the graces and courtesies one is accustomed to find in your pages. I must therefore be abrupt, but I hope accurate, and will confine myself to the situation in Canada.

A. (1) There are, in Canada, six provincial architectural associations.

(2) These comprise a total membership of just 600 practising architects.

(3) The provincial associations work under provincial charters ; they affiliate under the Royal Architectural Institute of Canada, a proportion of all members' dues being paid to that body, which has thus 600 members.

(4) The Royal Architectural Institute of Canada does not examine ; some of the provincial associations do.

(5) When all the provincial associations have charters closing the profession, the R.A.I.C. will probably become an examining body—say fifty years hence.

(6) The R.A.I.C. describes itself as in affiliation with the R.I.B.A., and the R.I.B.A. remits to it a portion of its fees.

B. (1) There are, in Canada, 53 Licentiates R.I.B.A., 38 Associates R.I.B.A., 13 Fellows R.I.B.A.—i.e., 17 per cent. Canadian architects are members of the R.I.B.A.

(2) A special examination for A.R.I.B.A. has been held in Canada for many years, but no preliminary or intermediate examinations.

(3) Those who pass the R.I.B.A. examinations are exempt from examination by provincial associations.

(4) Some who qualify for A.R.I.B.A. in Canada never go forward for admission as Associates.

C. (1) There is little inducement for Canadian architects to become or remain members of the R.I.B.A., as the R.I.B.A. has never done anything for its members in Canada except send them the JOURNAL in exchange for its fees.

(2) Within Great Britain members of the R.I.B.A. are encouraged to observe certain decencies in the matter of professional etiquette among themselves by admonition, and occasionally by corporate action.

(3) Members in Canada are not in any way protected by the R.I.B.A. against the adoption by fellow members of aggressive standards of business ethics.

These things being so, the answer to Mr. Middleton's question is, perhaps, " Why bother ? "

There are two missions which the R.I.B.A. might perform throughout the Empire, if it is prepared to act in a purely altruistic way, so far as the interests of its members resident in Great Britain are concerned ; and I trust I have made it clear that it does not act in the interest of the members in Canada. These missions are, firstly, to set and support a decent standard of professional ethics among its members, and, secondly, to maintain and propagate what is characteristic in the national tradition of design.

Now, some of us everywhere are inclined to think that the last notes struck under R.I.B.A. auspices in the matter of architectural education are not calculated to perpetuate, but to destroy, what is best and most characteristic in our national traditions as to design. Some of us in Canada, moreover, are also inclined to think that if the R.I.B.A. takes our subscriptions it ought to invent some machinery for the maintenance of professional standards of conduct among its members here.—I am, yours faithfully, PERCY E. NOBBS. [*F.*].

95 Town Hall, Johannesburg, S. Africa.
19 October 1921.

To the Editor, JOURNAL R.I.B.A.,—

DEAR SIR,—Mr. G. A. T. Middleton's letter in your issue (24 September last) will awaken response from many overseas members. Speaking as one born in Australia and whose working life has mostly been spent in Africa, the writer can feel, for the overseas point of view, an intelligent interest. The old Institute has won for itself a supreme place in the minds of all English-speaking architects all over the world, and it is regarded as an honour to be enrolled on its register; nevertheless, its constitution and habits are more English than British and more British than Imperial, in the sense of being fully abreast of great architectural movements in overseas countries. In fact, one hardly ever sees anything in the JOURNAL of work, say, in Africa or Australia or New Zealand, and I can call to mind no instance of an article being published from any of these great Dominions. I mention the JOURNAL advisedly, as it is the main link between us, and one could hardly imagine the Institute continuing to hold its sway without its valued paper. Distant men have no personal knowledge of the men who run the Institute, and it is not likely that the majority will ever have sufficient spare means to give them a trip home to participate in the privileges which the Institute enjoys in London.

I think Mr. Middleton's suggestion that the President should be sent round to, at least, the greater Dominions an excellent one. The local Institutes everywhere would be delighted to treat him as a guest, and the expense of travelling round the world, say, once every five—or even ten—years could be easily met by the Institute. If not the President, then the immediate Past-President, fully and solemnly invested with powers of delegation. My own feeling is that our chief leaders at home have but small conception of the work in the Dominions.

In Africa the influence of the R.I.B.A. is greater than in Australia. This is because a larger proportion of our men are home-born and because we are not so far away.

Now, as regards Mr. Middleton's definite suggestion of Branches, these are hardly needed, as local Institutes exist which fill local needs, and are kept in alliance with

the R.I.B.A. by definite acceptance by the latter; and I understand the R.I.B.A. may raise objection to any by-law they may pass if not in accord with its own charter and policy. Beyond this I do not think it is easy or necessary to proceed, as it will accomplish no closer union than now exists, and may even be a danger to the R.I.B.A. by reason of a sometimes lower local standard of admission, or if by examination (which is not common) a lesser degree of proficiency. The R.I.B.A.'s traditional policy is excellent, and she should now, as before, be the first among equals and the leader of architectural thought and movement, but she should keep herself free.

What is certainly necessary is a modern thought in regarding the former colonies—now Dominions—as sister nations. I wish, in reference to this, to make certain suggestions. First, that in the award of the Royal Gold Medal the assessors should take more notice of the great Dominions. Such a medal has never been awarded to a person in Australia, New Zealand, or Africa. I do not argue for a geographical selection, as the award is on architectural merit; yet with fairly travelled experience of the United Kingdom, Africa, and Australia, I feel that it is possible to select an occasional man overseas who would honour the Medal. The Empire possesses no better collection of good architecture than can be found in a city like Melbourne. If the Royal Gold Medal cannot so be occasionally bestowed, then why not have a Dominion Medal from the Institute either yearly or every three years?

My next suggestion is that members in each Dominion should appoint members of Council of the R I.B.A. for their own areas, as is done by members of the Institution of Civil Engineers. These persons could deal with local applications for membership and forward them to the R.I.B.A. with any necessary report. The posts would be an honour to those elected and provide a vital link needed in the administration. The Colonial Secretaries of the R.I.B.A. could retain their present posts till death or resignation, after which no more would be appointed.

My third and last suggestion is that, say, once a year these Dominion Councillors of the R.I.B.A. should appoint or invite a member or other suitable person to contribute to the JOURNAL an article on the architecture of their country or Dominion, and so keep British opinion abreast of Dominion work, just as the paper now informs us overseas members of British movements and work.—Yours faithfully, EDWARD H. WAUGH [*A.*].

[Mr. Waugh is a Past-President of the Association of Transvaal Architects. He is President of the Board of Examiners appointed to admit persons to practise as architects; he was also the first chairman and editor of *Building*, the quarterly journal of the Association, and has held other important positions in connection with architecture in South Africa.]

Architects and Architectural Journalism

By W. T. PLUME, Hon. A.R.I.B.A.,
Editor of *The Builder*.

[*Extracts from a Paper read before the Liverpool Architectural Society on 22 November.*]

The lecturer stated that the object of his Paper was to try to establish a closer relationship between architects and the architectural press, as distinct from the political press. The architectural press had a more or less limited artistic, professional, and trained public which had to be supplied with matter specially concerning it, which matter was rarely of any interest to the daily political press, because the general public had a very incorrect idea of what architects were or what architecture was.

Architecture had been defined as a business profession and an art, and a recent writer—an architect—had said that no more than 10 per cent. of an architect's work came under the definition of art. If this expressed the facts, we got an indication of the relationship which must, as things were, exist between the architectural press and its public and the extent of the influence of that press with both architects themselves and the public at large. If it were a business, a profession, and an art, then artists must not be surprised if they found business considerations formed some part in the kind of architectural journal produced, and business and professional men must expect to find that the art side of their work took its place too.

One criticism urged against the architectural press was that it too often illustrated badly designed buildings and that it should publish nothing but good work. Certain works of the past always excited our admiration, and there were many fine buildings erected in our own time which would probably be as much admired by posterity as by us. But there were others, and of those it might be said that they served their purpose, that they were conveniently planned, that they satisfied the by-laws and the client—that they were, in fact, the outcome of certain inflexible laws which had not left the architect free, and which, in fact, had often stultified his effort. Should they not have recognition as the earnest efforts of living architects? As completed works we could not shut our eyes to them, and, whether they were published in the press or not, the public, including architects, saw them. On the whole, it appeared to be a fairer and more logical policy to illustrate work which had been or would be carried out, and leave the profession to judge it as it might. It might be a stimulus to some if good; and if bad, it would serve to indicate the need for

improvement in the quality of design. He appealed for a little more public spirit on the part of architects who were responsible for the best modern work, but who here and there withheld it from publication. By their work and the standard they set their influence was considerable, and by its publication they could do much to improve the quality of design.

The architectural press had played its part not only in assisting men in their work by what it printed and illustrated, but by the prominence which it had given to the work of young and unknown men—and even well-established men too. That this assistance was recognised, acknowledged, and valued by most architects he knew; but there were those who had profited greatly by this publicity who did not remember the first stages of that success, and how much they had benefited in their time by seeing the published work of leading men and in having their own work seen by others.

The architectural press appreciated the greatness of the architect's profession and the importance of the building crafts, and it was willing to assist to the fullest extent in broadening and extending public appreciation so that in time the public would understand how important to them was the work of architects. That the public did not realise this to-day was, he feared, the architects' fault rather than that of the press; but that was no reason why they should not work together to create this understanding and secure at least as much appreciation for fine building as was shown by the American public. The education of the public could not come before the proper education of the architect. If the architects were qualified to lead, the public would follow.

Fees Payable to District Surveyors under the London Building Acts

A matter of interest to architects, builders and owners is contained in the London County Council (General Powers) Act 1921, which received the Royal assent on 28 July 1921.

By section 26 (1) of this Act, " all fees payable to district surveyors under or in pursuance of the London Building Acts 1894 to 1920 or under any bye-laws " are increased by 25 per cent. The London County Council are by section 26 (2) of the Act empowered to make a further increase of the fees, " not exceeding a further 25 per cent.," and the Council has given notice (*London Gazette*, 9 September 1921) that, in the exercise of its powers under the Act, it has decided that all fees payable to the district surveyors under or in pursuance of the London Building Acts 1894–1920, or under any bye-laws, shall be increased as from 1 October 1921, and until further order, by 25 per cent. in addition to the increase of 25 per cent. prescribed by the Act.

The 25 per cent. increase granted by the London County Council may be varied from time to time by the Council, in which case a further public notice must be given.

A point of special interest is dealt with in section 26 (4) (A) of the Act, and might be referred to as the " fee for small works on large buildings." The fee—termed " the appropriate fee "—is based upon the cost of the " addition, alteration or other work," and varies from £1 1s. for work not exceeding in cost £25, up to £8 8s. for work exceeding £400 and not exceeding £500 in cost. This " appropriate fee " is payable in substitution of the increased fees above mentioned, and is only applicable to an addition, alteration or other work for which a fee is payable under Part I. of the Third Schedule of the London Building Act 1894 and increased by or under the Act of 1921, and not to other works or services performed, for which a fee is payable under other parts of the Third Schedule of the 1894 Act or under the subsequent amending Acts or bye-laws.

The expression " cost " has been defined to mean and include the total cost of and incidental to the addition, alteration or other work; the cost of any work for which a special or separate fee is payable must not be included in the cost of the work to which " the appropriate fee " is applicable.

It should be specially noted that " the appropriate fee " appears to be limited to those cases where a building notice has been duly served on the district surveyor as required by section 145 of the London Building Act 1894, and where satisfactory evidence of the cost has been produced to the district surveyor within 14 days after completion of the addition, alteration or other work.

The operation of the Act so far as it relates to increased fees and the appropriate fee, etc., will cease on 31 December 1926, and it is understood that in the meantime the Council will introduce into Parliament a Bill to make provision as to the fees to be payable after that date to district surveyors.

Ulster Government Buildings

In August last the President of the Royal Institute of British Architects and a few members of the Council were invited to attend at H.M. Office of Works. As a result of that meeting it was, by the agreement of the architects present, left to the President to give to the First Commissioner the advice which he required to obtain from the Institute. In view of the fact that the Government had decided that a competition was for various reasons inadvisable and impracticable, the President took the course of laying before the First Commissioner a comprehensive and very carefully selected list of capable and available architects in Great Britain and Ireland. Several of the gentlemen whose names were submitted will be aware, owing to a private

communication from the President, that their names were included in the list, but others—in fact, the greater number so included—received no intimation that their names were under consideration.

STATEMENT IN PARLIAMENT.

Sir J. Gilmour stated, in a written Parliamentary reply, on 10 November, that the First Commissioner had invited Mr. Ralph Knott, F.R.I.B.A., to design and execute the public offices in connection with the Civil Service of the Northern Irish Government. He had also invited Mr. Arnold Thornely, of the firm of Messrs. Briggs and Thornely, to execute the Parliament House. Both these architects had consented to undertake the work, which would be begun as soon as circumstances permitted.

THE ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.
31 *South Frederick Street, Dublin.*
10 *November* 1921.

To the Editor, JOURNAL R.I.B.A.,—

SIR,—In view of the reply by Sir John Gilmour to a question asked by Mr. Reid in the House of Commons on 28 October, my Council, at their meeting on 7 November last, passed the following resolution :—

" That the Council of the Royal Institute of the Architects of Ireland are of opinion that the designs for the proposed buildings should be made the subject of an open competition, and that copies of the resolution be forwarded to the First Commissioner of Works, the Press, and the Royal Institute of British Architects.—I am, Sir, your obedient servant,

A. BUTLER,
Assistant Secretary.

RETIREMENT OF R.I.B.A. OFFICIALS.

The following Resolution was ordered to be entered on the Minutes :—

> Resolved, that the Council of the Royal Institute of British Architects do hereby place on record their deep appreciation of the loyal and devoted service rendered by Mr. H. G. Tayler and Mr. George Northover during their long connection with the Royal Institute.

THE PERMANENT STAFF OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

Mr. H. Godfrey Evans, B.A. (Cantab.), has been appointed Assistant-Secretary of the Royal Institute, and Mr. James Haynes, B.A. (Oxon.), has been appointed Secretary of the Board of Architectural Education.

Mr. Evans, who is in his twenty-ninth year, was born in Buenos Ayres, and educated at King Edward VI School, Norwich, whence he proceeded to Cambridge as a Classical Exhibitioner of Queens' College, where he obtained his degree with Second Class Honours in the Classical Tripos, part I. Mr. Evans played for his College at Rugby football and cricket and in the Freshmen's match at hockey.

After training with the O.T.C. at Cambridge, Mr. Evans obtained a commission in the R.A.S.C., and proceeded with the 21st Division to France in September 1915. Transferring to the Rifle Brigade, he was attached to the 3rd Battalion, and when that unit was associated with the 8th Royal Surrey Regiment in the memorable defence of Le Verguier, on 21 March 1918, he was wounded, after which date he saw no further active service.

Mr. Haynes, who is in his twenty-third year, was educated at Merchant Taylors' School, and in 1916 he obtained 40th place out of 1,000 candidates in the Army Entrance Examination for Sandhurst. He was for some time at the Royal Military College and later, preferring Artillery work, passed through the First Artillery Cadet School and obtained his commission in 1918. He was then posted to the Royal Horse Artillery at Woolwich, and afterwards served for some months in France in the 7th Brigade Royal Horse Artillery, First Cavalry Division. On demobilisation Mr. Haynes proceeded to Hertford College, Oxford, and graduated as Bachelor of Arts in 1921 with Honours in the School of Jurisprudence. He identified himself very fully with the life of the University, and rowed in his College Torpid for one year and in his College Eight for three years, and was also tried for the 'Varsity Eight.

Miss E. H. Mann, M.A. (Aberdeen), has been appointed Assistant Secretary of the Architects' Benevolent Society.

The Librarian, at the request of the Council, has also recently undertaken the Editorship of the Institute *Journal*.

REINSTATEMENT OF MEMBERS.

Mr. Cyril Edward Power has been reinstated as an Associate.

Mr. George Walesby Davis has been reinstated as a Licentiate.

IRON PORTLAND CEMENT SUB-COMMITTEE.

Mr. H. D. Searles-Wood has been appointed representative of the Institute on the Iron Portland Cement Sub-Committee of the British Engineering Standards Association.

THE REGISTRATION OF ELECTRICAL CONTRACTORS.

Mr. Alan E. Munby has been appointed to represent the Institute on the Committee representative of the Institution of Electrical Engineers, Electricity Supply Undertakings, Electrical Contractors and Electrical Manufacturers to enforce a national standard set of wiring rules.

Competitions

SOUTHEND-ON-SEA. PIER PAVILION IMPROVEMENT.

The Competitions Committee desire to call the attention of Members and Licentiates to the fact that the conditions of the above competition are unsatisfactory. The Competitions Committee are in negotiation with the promoters in the hope of securing an amendment. In the meantime Members and Licentiates are advised to take no part in the competition.

LEYS SCHOOL, CAMBRIDGE. COMPETITION FOR CRICKET PAVILION AS WAR MEMORIAL.

The Competitions Committee are in negotiation with the promoters.

AUCKLAND WAR MEMORIAL COMPETITION.

The revised conditions are now available for inspection in the Library.

BOROUGH OF HARROGATE WAR MEMORIAL.

The Harrogate Corporation invite architects to submit competitive designs and estimates for a War Memorial, to be erected on a site now known as the Prospect Crescent Gardens, which was recently purchased for the purpose of street improvement, and on which it is proposed to erect a monument to commemorate the period of the war from 1914–1918. Provision should be made for a tablet to contain, approximately, 800 names. The total cost, including all the necessary foundations, lay-out, etc., should not exceed £5,000. The President of the R.I.B.A. will be asked to officiate as assessor, or to nominate three gentlemen for the Committee to select from as assessors to advise the Corporation as to the merits of the respective designs. Premiums: First, £100; second, £50; third, £25; but if the premiated design is carried out, the amount of the premium shall merge in the commission of £6 per cent. on the actual cost of the work. Designs, reports, etc., must be addressed to the Borough Engineer, Municipal Offices, Harrogate, not later than 1 December 1921.

COUNTY BOROUGH OF HASTINGS. COMPETITIVE DESIGN FOR MUSIC PAVILION.

Competitors are invited to submit drawings in competition for the proposed new Pavilion, to be erected on a site on the Front opposite the East Pier. The total cost of the building, including foundations, drainage, lighting, heating, and any boundary railing that may be necessary, but exclusive of furnishing, is not to exceed £60,000. Premiums: First, £150; second, £100; third, £50. Drawings and report must be forwarded to the Town Clerk, Hastings, not later than 30 November 1921. Questions and replies may now be seen in the Library.

COMPETITIONS OPEN.

The "Daily Mail" Labour-Saving House Competition.
Hastings Music Pavilion.
Harrogate War Memorial.
Paisley War Memorial.
Auckland War Memorial.

The conditions and other documents relating to the above competitions may be consulted in the Library.

Examinations

EXHIBITION OF DESIGNS.

It has been decided that an Exhibition of the Designs of those candidates from the "Recognised Schools" claiming exemption from the Final Examination under the new conditions be held in the middle of July each year, and that a Special Meeting of the Board of Architectural Education be held for the purpose of inspecting the designs.

EXAMINATIONS IN INDIA.

A Special War Examination will be held in Bombay for the benefit of candidates residing in India.

THE LONDON UNIVERSITY SCHOOL OF ARCHITECTURE.

On the recommendation of the Board of Architectural Education, the Council of the Institute have decided to recognise the five years' Diploma and Degree courses of London University as exempting from the Final Examination of the R.I.B.A., on the usual conditions.

STATUTORY EXAMINATION FOR DISTRICT SURVEYORS.

Mr. H. R. Chanter was granted a certificate of Competency to act as District Surveyor.

ALTERATION IN QUALIFICATIONS FOR REGISTRATION AS PROBATIONER.

Applicants desirous of qualifying for Registration as Probationers R.I.B.A. must in future produce three and not more than four sheets of drawings showing an elementary knowledge of Geometrical, Perspective and Freehand Drawing, instead of examples of Geometrical or Perspective and Freehand Drawing.

ARCHITECTS' AND SURVEYORS' ASSISTANTS' PROFESSIONAL UNION.

Representations are being made to the Ministry of Labour by the Council of the Institute in support of the claims of the Union in the matter of unemployed assistants.

Allied Societies

BIRMINGHAM ARCHITECTURAL ASSOCIATION.

The second general meeting of the Birmingham Architectural Association was held at the Society of Artists' Rooms, New Street, Birmingham, on Friday, 18 November. Mr. H. T. Buckland, F.R.I.B.A., took the chair, and Mr. F. G. Minter, a London contractor, read a paper entitled "A Contractor's Views on Contracts and Architects."

Mr. Minter said that it was certain that a body of architects would not at first agree with the suggestions which he would put forward; for if they did, it would mean that we had reached that ideal state of society for which we were all striving, and to which he thought we should never attain.

It should be remembered that every contract depends on three persons—the client, the architect, and the contractor. The client desires a building to meet his requirements, but often he does not consider the appearance of the building if it serves his purpose. He also wishes to obtain his building at the lowest price possible commensurate with the standard of finish that will suit him. The architect should be justice personified, and hold the balance evenly between the client and the contractor. The duty of the contractor is to erect a building in accordance with the instructions of the architect.

There are two types of contract in vogue at the present time. One is the usual lump sum contract, and the other the percentage or fee contract. With the lump sum contract, the client is supposed to get a competitive price and to know exactly how much he will spend. In practice this rarely works out accurately. Unexpected difficulties may arise even before the foundation walls are above ground. In settling up an account long periods of time frequently elapse before the final settlement takes place, and the contractor, anticipating this, is forced to estimate at a higher figure.

With the percentage or fee contract, time is saved in preparing an elaborate bill of quantities. The fee is naturally governed by the amount, and gives the contractor a real interest in getting the work done economically. A clause could be inserted that if the work could be completed under a certain amount, the client and contractor should share in the saving.

Concerning sub-contractors, Mr. Minter said that firms are often called in whose work is not of the standard of the general contractor, and who prove a great nuisance and a source of delay. They should be bound by the same conditions regarding time and payment as the general contractor.

Mr. Minter, in continuing, suggested that it would make a good practical finish to a young architect's training to spend six months with a firm of contractors, as it would enable him to see things from both points of view.

A quantity surveyor can often prevent dispute over contracts if he is a good business man who understands his architect's eccentricities, and provides for them in his estimate.

With regard to the new form of contract which the two Institutes in London are trying to arrange, the builders will be very pleased when they can have a model form of contract. The L.C.C. have one at present in which there is the usual retention clause for maintenance. This money they place on deposit at an agreed bank in joint names, and all interest on it is paid to the contractor, together with the retention money, on satisfactory completion of the work. This might be well adapted to all contracts over a certain figure.

Mr. Minter, in concluding, said the slump in building trades cannot be for want of capital, as instanced by the £20,000,000 Local Loans that the Government recently issued. The whole amount was subscribed in twenty-four hours. It must be due either to the want of confidence in the existing order of things, or else to the belief of the general public that profiteering is going on. The latter Mr. Minter denied, and showed what measures he had taken to break up this idea.

Notices

APPOINTMENTS UNDER SEAL.

The Council, on the recommendation of the Practice Committee, desire to call the attention of members to the following extract from the last annual report of that Committee :—

> "Members appointed as architects by public authorities or other corporate bodies should insist on the appointment being made under seal . . . the Committee feel very strongly that a large proportion of members are not as businesslike as they should be, in their own interests, in regard to these matters."

ELECTION OF MEMBERS, 9 JANUARY 1922.

The following applications for election have been received. Notice of any objection or other communication respecting the candidates must be sent to the Secretary for submission to the Council prior to Monday, 19 December 1921.

AS FELLOWS (2).

BENNETT : THOMAS PENBERTHY [*A.* 1912], 12 and 41 Bedford Row, London, W.C.1 ; 12 Bedford Row, London, W.C.1.

FOSTER : REGINALD CHARLES [*A.* 1909], Council Offices, Buckhurst Hill, Essex ; "Casa," Monkhams Lane, Woodford Green, Essex.

AS ASSOCIATES (4).

BASTO : ANTONIO HERMENEGILDO DE SENNA FERNANDES [Final Examination], 46 Cambridge Road, London, S.W.11.

FORSHAW : JOHN HENRY, M.C. [Special War Examination], Merridale, Burscough Road, Ormskirk, Lancs.

POPE : CLEMENT LAWRENCE [*S.* 1914—Special War Exemption], "Sunny Brae," Moorside Road, West Moors, near Wimborne, Dorset.

SHEPPARD : EVERARD [Special War Examination], St. Helens, Barnmead Road, Beckenham.

ELECTION OF MEMBERS, 6 MARCH 1922.

The following applications for election have been received. Notice of any objection or other communication respecting the candidates must be sent to the Secretary for submission to the Council prior to Monday, 6 February 1922.

AS ASSOCIATES (2).

KERR : JAMES AUBREY [Special Examination], 35 Morton Street, Wollstonecraft, Sydney, N.S.W.

OSBALDISTON : GEORGE ALBERT [Special War Examination], "Kalimna," Milton Road, Auchenflower, Brisbane, Australia.

At a General Meeting of the Royal Institute of British Architects on Monday, 19 December, at 8 p.m., Mr. Thomas E. Collcutt, Past President of the R.I.B.A. and Royal Gold Medallist, will read a Paper entitled "A Plea for a Broader Conception of Architectural Education."

R.I.B.A. JOURNAL.

Dates of Publication.—1921 : 12th, 26th November ; 10th, 24th December 1922 : 14th, 28th January ; 11th, 25th February ; 11th, 25th March ; 8th, 22nd April ; 6th, 20th May ; 3rd, 17th June ; 15th July ; 19th August ; 23rd September ; 21st October.

Members' Column

APPOINTMENTS WANTED.

A.R.I.B.A., whose carefully nursed practice passed away peacefully six months ago and shows no signs whatever of blooming afresh, seeks situation as assistant to architect in London or abroad. Design, surveys, working drawings, perspectives and the business side. Or would assist architects during sudden rushes of work at own office.—Address Box 129, c/o Secretary R.I.B.A.

A.R.I.B.A. desires appointment; is prepared to acquire an interest in established firm after probationary period. Eighteen years' varied experience. Ex-R.A. Schools student. Would join architect in competition or speculative work on mutual terms.—Address Box 1421, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.1.

LICENTIATE R.I.B.A., until recently on "Housing," and with four years' experience in a surveyor's office, would accept post as assistant-clerk of works or building-inspector. Excellent references. Very low salary.—Box 1712, c/o Secretary R.I.B.A.

A.R.I.B.A., M.S.A. (29), desires permanent position; all-round experience; design, specifications, quantities, estimates, working drawings, for banking, institutional, factory and engineering buildings; steel construction; ex-Service; commencing £6 per week; excellent references.—Apply Box 2121, c/o Secretary R.I.B.A.

A young Architect, A.R.I.B.A., desires partnership in well-established firm in the South of England; would probably entertain the purchase of part share.—Apply Box 1219, c/o Secretary R.I.B.A.

ARCHITECT'S ASSISTANT, disengaged; member of Institute; 20 years' experience; F.S. details of original ornament; perspectives in line, colour, or pastel; interior and exterior decorative work. Salary moderate.—Box 2501, c/o Secretary R.I.B.A.

A.R.I.B.A. (39) seeks re-engagement as draughtsman or surveyor in London; designs; specifications and superintendence of work in progress; special knowledge of factories and engineering works; wide London experience; accustomed to take charge of office; reasonable salary.—Box 222, c/o Secretary R.I.B.A.

FULLY QUALIFIED ARCHITECT (41), 14 years' practice; experience specialising in up-to-date economical factory and industrial buildings; versatile in the planning and designing of buildings of a general and business character; desires to help or co-operate with another architect on mutual terms, or would accept position as salaried partner; expert designer and rapid draughtsman; accustomed to make calculations for and design own economical steel construction work, reinforced concrete foundations, rafts, etc.; excellent recommendations.—Box 502, c/o Secretary R.I.B.A.

ARCHITECT, Fellow, 20 years' practice pre-war, desires an introduction with a view to the purchase of a partnership with Architect or firm of unquestionable standing in the profession, and having large and important works on hand and in prospect. Information as to social position, capabilities regarding the handling of large contracts and works of importance, and influencing such may be exchanged at a conference. A capital of £5,000 (not more) will be invested in the practice. London preferred.—Apply Box 2411, c/o Secretary R.I.B.A., 9 Conduit Street, London, W.1.

Minutes II

At the Second General Meeting (Ordinary) of the Session 1921–1922, held Monday, 21 November 1921, at 8 p.m.—Present: Mr. Paul Waterhouse, *President*, in the Chair; 22 Fellows (including 5 members of the Council), 32 Associates (including 2 members of the Council), 10 Licentiates, and numerous visitors—the Minutes of the Meeting held on 7 November 1921, having been taken as read, were agreed as correct.

The Hon. Secretary announced the decease of:—Briggs: Frank Gatley, *Fellow* 1900; Ford: George McLean, *Associate* 1892, *Fellow* 1908; Goldie: Edward, *Fellow* 1904; Hunt: Frederick William Hugh, *Associate* 1868, *Fellow* 1881; Lechmere-Oertel: Frederick Oscar, *Associate* 1888, *Fellow* 1901; Littlewood: William Henry, *Associate* 1882, *Fellow* 1888; Monro: James Milne, *Fellow* 1906; Owen: Joseph, *Fellow* 1905; Barlow: William Tillott, *Associate* 1894; Buckley-Jones: James Alfred, *Associate* 1899; Roumieu: Reginald St. Aubyn, *Associate* 1877; Cox: G. A., *Licentiate*; Dyson: Ernest William, *Licentiate*; Keech: Edward William, *Licentiate*; Browne: Flint, *Licentiate*; Parker: John, *Fellow* 1902; Bargman: Frederick, *Licentiate*; Connon: John Wreghitt, *Fellow* 1881; Nagy: Professor Virgil, late *Honorary Corresponding Member*, of Budapest.

And it was RESOLVED that the regrets of the Royal Institute for their loss be entered in the Minutes.

The President formally admitted the following Members attending for the first time since their election:—Tickle: Arthur George Warnham, *Fellow*; Pite: Robert William, *Associate*.

The President called the attention of the Meeting to the fact that Mr. Bertram G. Goodhue and Mr. Donn Barber, of New York, were present, and conveyed to these gentlemen the Royal Institute's welcome.

The President announced that through the generosity of Mr. William Walcot and his publishers a complete set of framed etchings of his classical compositions had been presented to the Royal Institute. A hearty vote of thanks to Mr. Walcot and his publishers was passed.

Mr. George H. Widdows [*F.*], having read a paper on "School Design" and illustrated it by lantern slides, a discussion ensued, and on the motion of Sir Edmund Phipps, C.B., Principal Assistant Secretary, Elementary Education Branch, Board of Education, seconded by Mr. G. F. N. Clay [*F.*], Architect to the Board of Education, a vote of thanks was passed to Mr. Widdows by acclamation, and was briefly responded to.

The meeting closed at 9.50 p.m.

At a Special General Meeting held on Monday, 21 November 1921, following the Ordinary General Meeting above recorded, and similarly constituted, the Minutes of the Special General Meeting held on 7 November, having been published in the JOURNAL, were taken as read, and signed as correct.

The President announced that the Meeting had been summoned for the purpose of confirming the Resolutions passed at the Special General Meeting held on 7 November, as follows:

A. *Extension of Premises.*—That the purchase for the sum of £11,000 of the lease (perpetually renewable) of No. 10 Conduit Street, W., be hereby confirmed.

B. That the Council be authorised to create a mortgage on or otherwise to charge No. 10 Conduit Street and the other leasehold and freehold property of the Institute (subject to the existing mortgage) as the Council shall think fit to secure the further sum of £10,000 and interest and to execute such deeds and documents as may be required in connection therewith.

C. *Amendment of By-Laws Relating to Hon. Associates.*—That effect be given to the Resolution of the General Body passed on 28 February 1921—viz., that the number of members in the Honorary Associate class shall not exceed sixty; that the entrance fees and annual subscriptions of Honorary Associates be abolished, and their privilege of voting in the election of Council and Standing Committees be withdrawn.

1. That the following provision be added to By-Law 4: "The number of members in the class of Honorary Associates must not exceed sixty."

2. That Clause (*c*) in By-Law 17, which provides for the payment by Honorary Associates of entrance fees and annual subscriptions, be deleted.

3. That the following words be added to By-Law 63: "or in the election of the Council and Standing Committees."

4. That By-Law 16, which provides for the transfer of a Fellow who has retired from practice to the class of Honorary Associates, be deleted.

The Resolutions were moved from the Chair and passed by a unanimous vote.

The meeting terminated at 9.55 p.m